

REVIEWS

Q Acoustics 3000i 5.1 Hisense 55in TV LG WK7 smart speaker Samsung HW-N650 soundbar Sony X85 4K TV

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OPINION

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SHARP 8K TV

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Welcome

Just like Winter in Game of Thrones, 8K TV is coming. In fact, thanks to flatscreen purveyor Sharp, it's already here, sort of. With one eye on the 2018 World Cup (England may well be out by the time you read



this), and possibly the other on trying to boost its brand recognition after a few years out of the game, the company has made a 70in 8K TV available to buy in Europe.

The LV-70X500E comes with a few caveats. Firstly, with no tuner built-in, it's not actually a TV. Secondly, it costs a wallet-worrying €12,000. Thirdly, it can only be fed an 8K video signal via a convoluted 4 x HDMI connection. Fourthly, good luck finding any actual 8K video content.

I'm sure some early adopters may be tempted (the set upscales movies to its 33-million-pixel resolution), but I wouldn't be surprised if they also regret it. Other more consumer-friendly 8K models will arrive. For now, I'm happy to enjoy the 4K Summer.

Mark Craven

Editor



MENU









CONTRIBUTORS



John Archer: The experienced TV tester cut his teeth as an early HCC staffer



Jon Thompson: Film producer and post-production expert delves into Hollywood and AV



Steve May: HCC's former Ed. is one of the UK's most respected AV journos



Martin Pipe: Technical expert Martin is renown throughout the industry



Richard Stevenson: Former Editor of the UK CE trade journal *ERT*



Ed Selley: Audiophile Ed mixes his home cinema passion with a love of vinyl



Vincent Teoh: Professional video calibrator writes about technology and tweaking

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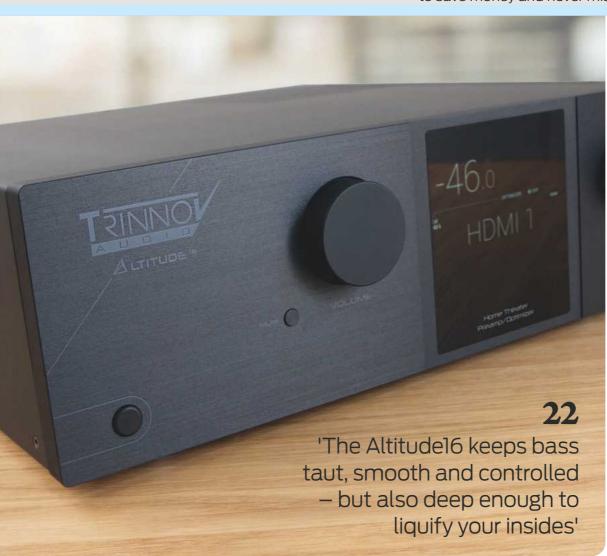
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- Detroit: Become Human; Grease: 40th Anniversary Edition [4K]; The Life Aquatic with Steve Zissou; Fifty Shades Freed
- Five Tall Tales: Budd Boetticher & Randolph Scott at Columbia, 1957-1960
- The Old Dark House; Death Smiles on a Murderer; Last House on the Left: Limited Edition; The Mad Death; The Mountain of the Cannibal God
- 00 Die Hard: 30th Anniversary [4K]
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Television

OLED 9002



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BULLETIN

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Pioneer unleashes Atmos AVRs



Pioneer has launched two new Dolby Atmos and DTS:X AV receivers. Priced £800 and £1,000 respectively,

the VSX-LX303 and VSX-LX503 (pictured) are 9.2-channel designs using the company's Direct Energy amplification, capable of powering either 5.2.4 or 7.2.2 speaker layouts (the LX503 can be further expanded to 7.2.4 with an external stereo amp). Both models support 4K/60Hz passthrough on all HDMI inputs and are compatible with HDR10, HLG and Dolby Vision HDR formats. www.pioneer-audiovisual.eu/uk

Polk's commanding soundbar



Hitting the UK in July for around £350. Polk Audio's Command Bar uses built-in Amazon Alexa Voice Service

and top-mounted far-field microphones for hands-free control of volume, mute, bass, sound modes and source selection. As well as Bluetooth and Wi-Fi functionality, the 'bar offers a suite of physical connections. including dual 4K-compatible HDMI 2.0b inputs (one positioned to allow a perfect fit for Amazon's Fire TV Stick), an HDMI (ARC) output, and optical digital audio input. www.polkaudio.com

Playlist....

Team *HCC* spins up its disc picks of the month

Star Wars: The Last Jedi 3D (All-region BD)



we absolutely love it), the latest Star Wars sequel boasts the most convincing 3D Blu-ray encode we've seen since, well,

The Force Awakens...

The Greatest Showman (Ultra HD BD)



Richly saturated HDR10 visuals and expansive Atmos audio ensure this musical sensation hits all the right notes on 4K Blu.

Jurassic World (Ultra HD BD)



How better to prepare for a trip to watch the latest sequel on the bigscreen than by revisiting this dino-tastic blockbuster?

Gifted (Region B BD)



An unemployed man discovers he has a real gift for murder in this intriguing South Korean thriller.

The Age of Innocence (Region B BD)



A new 4K restoration underpins Criterion's stunning BD release of Scorsese's elegant period drama.

Sharp unveils 8K monitor

70in display designed for commercial use now offered to home users

Sharp has introduced a 70in 8K TV monitor as its opening salvo in what is expected to be a gradual introduction of 7,680 x 4,320 pixel flatscreens at the premium end of the TV market.

The LV-70X500E, which will be available globally priced around €12,000, was unveiled at the IFA 2018 Global Press Conference in Rome.

Sascha Lange, Sharp Vice President for Marketing and Sales, believes 8K will create a new superscreen TV sector of 70in and larger models, even arguing that consumers now have the room to accommodate screens up to 128in. 'There's a clear desire for ever larger screens,' he told HCC. 'We've seen that with the growth of 55in and 65in 4K models. We believe that 8K will be a major trend at this year's IFA show in Berlin.'

Waiting for content

The LV-70X500E is not a typical TV, as it ships without a DVB tuner or HEVC decoder, and potential buvers will need to be to aware of the lack of actual



8K content. It can, however, upscale 4K or lower sources to its native resolution and present 8K still images played from USB.

Speaking at the IFA showcase, Bernard Fontaine, Head of Technical Innovations at France TV, said the broadcaster was planning to undertake 8K trials at The French Open tennis championship. The footage will not be broadcast, however, instead being viewable in the Roland Garros media centre.

In Japan, set-top boxes will provide native 8K content from the Tokyo 2020 Olympic Games.

The LV-70X500E uses a FALD backlight with local dimming control over 216 areas. As an indication of its groundbreaking nature, it has eight HDMI inputs, with four dedicated to delivering a native 8K signal. Alternatively, the screen can deliver four independent 4K feeds.

8K at the business end

Toshiyuki Fujine, Division Manager at Sharp's Sakai LCD panel plant, told HCC that the screen was originally envisaged as a business-to-business product, serving corporate, security and medical needs, but now will also be sold into the consumer space for early adopters. 'Second-generation 8K displays will offer a single HDMI 2.1 input,' he says, 'but that is not currently available to manufacturers.'

HCC has had a close look at this mouth-watering screen, and was left salivating. The LV-70X500E has a pixel density of 125 pixels-per-inch (ppi); up close, this means no visible pixel structure. The vibrancy of this wide colour panel also impressed.

Naturally, the set is HDR10 and HLG compatible, but there is no Dolby Vision or HDR10+ support. Peak brightness is quoted at 1,000 nits. 'When we designed this display there was no 8K-ready Dolby Vision chipset available,' explained Fujine. Sharp doesn't rule out adding dynamic metadata compatibility on future generations.

At the 'plex....

Heading out to see a flick? Catch these this month

Ocean's 8



June 18: Sandra Bullock leads the cast in this female-centric spin-off from the Ocean's Trilogy of heist movies. Joining her for what looks to be a criminally good film are Cate Blanchett, Anne Hathaway, Mindy Kaling, Sarah Paulson, Awkwafina, Rihanna and Helena Bonham Carter.

Sicario 2: Soldado



June 29: Writer Taylor Sheridan continues to explore the conflict around the US border with Mexico in this sequel to the acclaimed 2015 thriller. There's no sign of Emily Blunt, but Josh Brolin and Benicio del Toro are both back.

Skyscraper

July 12: Dwayne Johnson does Die Hard in this action-disaster epic that pits his former FBI agent — and now head of security at the world's tallest building — against a group of terrorists.

Rakuten's Vision for VOD

Streaming outfit is Europe's first to offer films in Dolby Vision and Atmos

Rakuten TV has become the first European Video-on-Demand outfit to offer movies in Dolby Vision and Dolby Atmos. Its app, available on LG Dolby Vision HDR and Atmos-enabled OLED and SUHD TVs, launches with a catalogue of 25 titles, all available to rent or buy, but says it hopes to grow this to 100 before the end of the year.

Josep Mitjà, Rakuten TV COO, told HCC the service is not an exclusive to LG, but that LG is currently the only screen maker to offer both Dolby Vision and Dolby Atmos support for streaming content. 'Our goal is to offer a cinematic experience in the home,' he says.

A number of Sony Pictures titles are available in Dolby Vision and Dolby Atmos, including Blade Runner 2049, Baby Driver, Bad Boys 2, Billy Lynn's Halftime Walk, Elysium, Life, Passengers, Pixels and Resident Evil: The Final Chapter. Rakuten suggests that a 20Mbps broadband speed is required to deliver 4K Dolby Vision and Atmos streams.

HCC had an early preview of the service at Dolby's European HQ, where we watched excerpts from Baby Driver and Blade Runner 2049. The subjective experience was comparable to a Dolby Vision-encoded 4K disc.

Mitjà doesn't rule out supporting other dynamic metadata standards, such as HDR10+, but cautions: 'We're not ruling it out, but we are not announcing support for another format anytime soon.'

He adds that Rakuten TV is working closely with Dolby engineers to ensure titles are not compromised with some of the technical issues that have



Josep Mitjà: 'We are working to get this right. Streaming may look simple, but in reality there is a lot of work behind it'

affected Dolby Vision content on other platforms. 'This is not an easy job,' he admits. 'We are working very closely to get this right.

Streaming may look simple, but in reality there is a lot of work behind it.'

As Rakuten is a transactional business that favours rental, Mitjà points out that 'there's no price premium on Dolby Atmos and Dolby Vision titles. We operate three price points: SD, HD and UHD. We don't want to overcomplicate things. There's typically one pound difference between them.'

Making movies

This Summer, Rakuten TV will also emulate rivals Netflix and Amazon by producing original content. Its Rakuten Cinema project launches with World

War II action thriller *Hurricane* as its first co-production.
The David Blair-directed movie, which stars Iwan Rheon and Milo Gibson, will have a simultaneous release in cinemas and on the Rakuten VOD platform.

'We have this feeling that shortening the release window is best for the industry,' says Mitjà. 'We hope to grow our slate, and shorten the window for our content on all platforms. It's a way to grow the market.'

Hurricane will hit cinemas and Rakuten TV simultaneously





Emotiva promises pure power

XPA-DR amp range targets audiophile system builders

A three-strong lineup of heavyweight amplifiers from Emotiva are being brought to the UK market by its distributor Karma-AV.

Aimed at audiophiles demanding serious power, the XPA-DR models feature a modular design with 'Differential Reference' amplifiers deployed in pairs. This, says Emotiva, provides each channel with a 'completely balanced low-noise signal path' and ensures 'natural dynamics, vivid resolution and absolute control.'

The XPA-DR1 (£1,300) is a mono model claiming 650W into an 8 ohm load. The two-channel XPA-DR2 (£1,750) promises $2 \times 550W$.

The XPA-DR3 (£2,150) is a 3 \times 450W design, perhaps suited to driving a left/centre/right soundstage in a high-end setup.

Features across the range are a choice

of balanced or unbalanced input (selectable via a toggle switch); gold-plated binding posts; steel chassis with milled aluminium faceplates; and Class AB output stages.

www.karma-av.co.uk







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Extras....

Small items that could make a big impression...

Cersei Lannister Collectible Figure



Bring a more regal feeling to your movie den with this 1/6th scale likeness of Cersei Lannister

from the HBO series *Game of Thrones*. Modelled wearing her iconic coronation dress, this collectible Cersei stands 11in tall and features an intricately detailed crown and GemFire ring, and comes with a pair of interchangeable hands. Pre-orders are now being taken at http://store.hbo.com.

Baseball Goes to the Movies



Author Ron Backer hits a home run with this extremely thorough and very informative look at the 74(!) baseball movies

that Hollywood produced between 1930 and 2014. It's a continually surprising journey that takes in everything from musicals (*Damn Yankees*) to thrillers (*The Fan*), award winners (*Moneyball*) to comedic three-quels (*Major League: Back to the Minors*). On sale now, priced around £15.

Star Wars: Maker Lab



Ever wanted to create Jabba slime, own a Hoth snow globe or build your own roving 'Mouse' droid? Well

now you can do all of that, plus a whole lot more, thanks to DK's new £17 hardback which collects together 20 *Star Wars*-related craft and science projects for you and (more likely) your little Padawans to enjoy.

New tricks for MusicCast

Yamaha refreshes multiroom lineup, revamps AVRs with AI processing

Yamaha's BAR 400 (p8) is just one part of a new season of MusicCast hardware from the audio specialist. Design and feature tweaks are taking place across the range, from standalone wireless speakers to home cinema AVRs.

Perhaps most noteworthy is the introduction of MusicCast Surround on Yamaha receivers. This function allows the company's MusicCast 20 and MusicCast 50 speakers to be employed as wireless surrounds in a multichannel AV setup.

MusicCast Surround features on Yamaha's new RX-V85 and RX-A80 ranges, from which there are ten models due to arrive this Summer.



Top of the new AVRs is the RX-A3080, which should ship with a £2,200 price tag around August. This features 7-in, 3-out HDMI switching (with Dolby Vision and HLG support); ESS Sabre DACs; a balanced stereo XLR input; Atmos/DTS:X decoding; and a claimed 150W per channel of power. However, as with the preceding RX-A3070, it's a nine-channel design with 11.2-channel processing — an additional stereo amplifier is needed to run a 7.x.4 setup.

As well as the aforementioned wireless surround capability, the RX-A3080 debuts a new Yamaha processing technology called Surround:AI. 'This AI instantaneously analyses scenes by focusing on distinct sound elements such as dialogue, background music, ambient sounds and sound effects, and automatically optimises the surround effect in real time, just as if a Yamaha sound engineer tunes the best sound specifically for you,' we're told.

Also featuring Surround:Al are the RX-A2080 (9.2-channel, £1,700) and RX-A1080 (7.2-channel, £1,300). The feature is omitted from the RX-A880 (7.2-channel, £1,000) and RX-A680 (7.2-channel, £750).

The step-down RX-V85 series is led by the seven-channel RX-V685, which will sell for £650 and is in shops this month. Power output here is rated at 90W per channel; again, Dolby Atmos and DTS:X support, MusicCast multiroom and 4K HDR

In addition to the MusicCast 20 (left) and MusicCast 50. there's now a MusicCast SUB 100 woofer, too

passthrough is on the spec sheet. The more affordable RX-V585 (£550) is less potent and features a single HDMI output rather than two; the £450 RX-V485 is a five-channel receiver.

Something that will cheer seasoned Yamaha watchers is a redesigned remote control and graphic user interface, available on all new AVR models bar the RX-V485 and RX-V585. The company says it 'simplifies operations' and creates 'better interaction'. The handsets for the RX-A1080, RX-A2080 and RX-A3080 will be backlit.

I need a hero

Back in multiroom territory, the MusicCast 20 and MusicCast 50 speakers see Yamaha streamlining its naming system a tad (they'll join the likes of the existing WX-030 and ISX-80), and adopting a new, curved-edge design.

The £230 MusicCast 20 packs a 3.5in woofer, lin tweeter and dual passive radiators into its cylindrical chassis, with top-mounted soft-touch buttons granting access to presets and alarm functions. Two speakers can be wirelessly tethered to work in stereo.

Meanwhile, the MusicCast 50 (£500) is a two-channel model that should fill the 'hero product' gap previously missing from the range. Yamaha promises a 'room-filling, dynamic sound', and has added an optical digital audio input to let the speaker hook up to a TV.



This month's top 10 news stories in handy, bite-sized chunks...



Off to the races

British hi-fi brands PMC, Chord Electronics,
Naim Audio, Trilogy Audio, Rega and Atlas
Cables are helping Paul Clark, owner of hi-fi
dealership HiFi Lounge, realise his dream of being
a race car driver. The six brands have signed deals to
sponsor Clark's recently acquired Radical SR1 sports
car, which he'll be driving at race meetings in

the forthcoming year under a 'Best of British Hi-Fi' banner. You can follow the progress of Paul's SR1 in the season's races by checking out the 'Motorsports' section at www.hifilounge.co.uk.

B&W R&D
Bowers & Wilkins is relocating its research and development centre from Steyning to a larger facility in the West

Sussex town of Southwater. The company claims that the new facility will accommodate multiple anechoic chambers and an increased number of listening test rooms and engineering suites.

Fancy some popcorn with your new soundbar?

Thanks to Samsung's new 'Movie Lounge' promotion, anybody who buys a selected All in One or Cinematic soundbar will receive a Joe & Steph's gourmet popcorn subscription. Better still: if you buy an Ultra HD Blu-ray player at the same time, Samsung will also send out a new 4K blockbuster to arrive with the popcorn each month. Visit samsung.com/uk/samsungmovielounge for all the details, plus full terms and conditions.

Sonos and Denon settle
The long-running patent infringement case brought by Sonos against Denon's HEOS system has quietly come to a close with Sound United (Denon's parent company) reaching an undisclosed settlement with its rival.

Sky rocks out in 4K
Sky will broadcast live coverage of the Isle of
Wight Festival 2018 on Sky Arts and Sky One
in 4K with Dolby Atmos audio. The four-day
event kicks off on June 21 and features the likes
of Depeche Mode, Liam Gallagher and Kasabian.

PS4 enters 'final phase'
Sony Interactive Entertainment's new CEO
John Kodera recently told investors and
analysts that the PS4 has entered the 'final
phase of its life cycle' during a discussion about the
revenue the console generates. However, before
fanboys start panicking, Kodera also hinted that the
PS4's successor wouldn't arrive until March 2021.

All hail the superfan!

New figures from UK retail organisation ERA claim that 'superfans' (consumers spending over £400 each year on a single format in a specific entertainment sector) are single-handedly slowing the decline of the UK Blu-ray market.

According to the ERA, these 247,000 'superfans' account for 61 per cent of sales — around £100m of the £161m spent on Blu-ray on these shores in 2017...

Disc sales going down
...However, the latest research from Kantar Worldpanel provides further evidence of the ongoing shift to digital, with a year-on-year drop of almost one million sales for physical video in the UK during the first 12 weeks of 2018. It also revealed that Ultra HD Blu-ray made up 3.3 per cent of disc sales – roughly 123,000 purchases.

New date for BD Beauty
The BFI has announced that its delayed
Blu-ray release of Jean Cocteau's 1946
classic *La Belle et la Bêtte* will finally see the
light of day on July 23. The release is based on a new
4K restoration of the film and counts a commentary
by Sir Christopher Frayling among its extras.

Say his name five times...
Candyman director Bernard Rose and star Tony Todd recently got horror fans buzzing when they took to Twitter to reveal that a 4K restoration of the acclaimed Clive Barker adaptation is currently in the works – and that Arrow Video will be releasing it on Blu-ray in the UK (and possibly the US as well). There's no word yet on a release date or extras, but it will no doubt be a huge improvement on the barebones platter that Universal Pictures put out in 2011.



Premiere...

What's happening in the world of TV and films...

Rambo does Sicario?



Sylvester Stallone has confirmed he's working on a script for a fifth *Rambo* film. The actor says that this time around Rambo will be going head-to-head with one of Mexico's most violent cartels to save a friend's kidnapped daughter.

Neeson mulls *MIB* role

Liam Neeson is the latest actor attached to director F Gary Gray's Men in Black reboot. Neeson has been linked with playing the boss of the London MIB branch, where Tessa Thompson's new recruit will be based. The plot reportedly pairs Thompson's character with Chris Hemsworth's 'former ace' agent H on a globe-trotting murder-mystery.

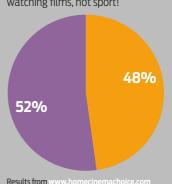
Spidey sequel's <u>villain</u>

While he never got to play the title role (despite endless rumours once linking him to it), Jake Gyllenhaal may get to star in a *Spider-Man* movie after all. It's been confirmed he is in talks with Sony about playing the villain Mysterio in the *Spider-Man: Homecoming* sequel.

We asked...

Will you be watching the World Cup on your home cinema setup?

Yes − bring on the 4K football!
No − my home cinema is for watching films, not sport!



Results from www.homecinemachoice.com Go online for more polling action











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Face to Face

Topics of discussion on the *HCC* Facebook page

On the cancelled Tremors TV series



When you see some of the trash SyFy does commission, this proves it's time for a change in the commissioning department! Mark Hevingham

Maybe it would just have been too good (or more likely, too expensive) for SyFy? Home Cinema Choice

Maybe Amazon or Netflix will pick it up?

Darren Arfur

Our fingers are firmly crossed! Home Cinema Choice

What you're watching on your home cinema...



The Greatest Showman with the kiddies before heading out to see Solo: A Star Wars Story.

Chris Bulman

Either *The Matrix* 4K or *Jurassic Park* 4K.

Scott Lawrence

Early Man UHD then The Matrix UHD. I hear the latter is an Atmos extravaganza! Jonny Roman

Watched the teen/children's comedy *Spider-Man: Homecoming*. Man, I miss Andrew Garfield... *Theo Coetzee*

Jumanji: Welcome to the Jungle, Three Billboards..., and Logan. Noel Keane

Streets of Fire on Blu-ray.

Mark Perry

If everything goes to plan my Saturday morning session will be a sublime/ridiculous double-bill of 007 classic *From Russia With Love* and sci-fi spoof *Spaceballs*.

John Hudson

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Back of the 'net

Trailers, technology and more to check out on the web



Short sharp freight flick...

The Martin Freeman zombie movie *Cargo*, now available through Netflix, began life as a sevenminute short made in 2013. Available to watch online, this film festival finalist is a brilliant example of condensed movie-making, packing tension and emotion into its tight running time.

youtu.be/gryenlQKTbE



Seconds out... round six

20th Century Fox will hope that *The Predator*, written and directed by Shane Black, can re-ignite interest in its killer alien franchise after some poor recent efforts. This first trailer doesn't reveal much, but does throw in a visual homage to the original movie. Due in UK cinemas September 14.

youtu.be/iJ3oX98ng8U



Pedal to the metal

YouTuber Patrick Willems breaks down what makes a successful movie car-chase in this 10-minute video. Willems is a likeable host, and his fast-paced delivery and editing means he can cram a lot in. Warning, though: it may make you want to watch *Matrix Reloaded* all over again.

youtu.be/GfGVOTSlakw



Foley masterclass

Another informative and in-depth (it runs for around 45 minutes) podcast from Dolby, this time in the form of a conversation with Skywalker Sound Lead Foley artist John Roesch. This covers plenty of ground, from sound capture to mixing, in a relaxed, chatty nature.

youtu.be/LOu71S9k29s



Someone pick this up please!

When news that Kevin Bacon was lined up for a TV series to act as a sequel to his 1990 monster movie *Tremors*, fans rejoiced. When network SyFy then announced it wasn't going to air, fans wailed. This now released trailer for the canned show gives us a tease at what might have been. Sob. youtu.be/L1EAgpuDyPw



Room service

With its cast of criminals, foul language and dark humour, *Hotel Artemis* (in UK cinemas July 20) appears to be channelling the *John Wick* movies and early Quentin Tarantino — which is no bad thing. And we're excited to see Jodie Foster playing against type in her first screen role in five years.

youtu.be/6A8QPFYFhPY



Nine things we loved at High-End: Munich Show 2018

May in Bavaria means asparagus, beer and a huge amount of incredible audio equipment – **Ed Selley** went along to enjoy all three

Over the fifteen years of its residency in Munich, the High End Show has become one of the major events on the home entertainment calendar. The unique design of the MOC exhibition centre, which combines open halls on its ground floor with separate rooms on the upper levels, makes it a space suited to accommodating every price level of audio equipment. It's therefore become an indicator of trends and developments in the industry as a whole. There's also something brilliantly surreal about the entire thing — parts of the expo are a temple of chrome, more art exhibition than hi-fi show.

And hi-fi was very much the word. While last year multichannel audio made a strong impression, in 2018 the High-End show adopted a firmly two-channel outlook – there was a smattering of home cinema equipment, but the most significant releases were stereo in nature. What tickled our fancy? Read on...

DYNAUDIO

New Dynaudio speakers don't happen terribly often, so the announcement of its new Confidence range garnered plenty of interest. Neither is this a mild makeover. While the speakers share some of the design principles of their predecessors, including the use of Magnesium Silicate Polymer (MSP) driver material, much is new, including a light-but-stiff baffle material, called Compex, and a newly minted tweeter waveguide, the DCC lens. Drivers have also been redesigned. The range extends from £11,000 for the Confidence 20 standmount to £35,000 for the top-line Confidence 60 three-way floorstander, and goes on sale later this year.

www.dynaudio.com

PMC

The Fact Fenestria is PMC's new flagship loudspeaker, and as a result is a typically no-holdsbarred technological exercise that's different in both design and appearance to any preceding model. Five years in development, the brand says it's 'the loudspeaker you'll never hear,' courtesy of a design process focused on removing cabinet-borne



distortion and colouration. Working to achieve this goal is an aluminium assembly that isolates the tweeter and dome midrange from the rest of the driver activity; side sections to the cabinet that act like mass anchors in an earthquake-proof skyscraper; and an overall construction based on vibration analysis of every element of the speaker. Naturally, this 1.7m-high three-way model comes with a premium price — £45,000 per pair.

pmc-speakers.com

FOCAL

Having updated its range-topping Utopia system from the bottom up, Focal used Munich to show off the newest members of the family. The £90,000 Stella Utopia EM Evo and £160,000 Grande Utopia EM Evo represent the ultimate expression of the company's design philosophy. Demonstrations of the latter, in conjunction with Naim

The High-End Show takes over Munich's MOC exhibition centre each May

Focal's Grande Utopia EM Evo was partnered with Naim amplification





Statement amplification, showcased an accurate and effortless presentation with phenomenal bass, although the choice of music left a lot to be desired and we'd have loved Focal to have given the volume dial a good cranking.

www.focal.com

TECHNICS/PANASONIC

Panasonic, thanks to the rebirth of the Technics brand, now has its fingers in plenty of AV pies. This meant that at Munich it was able to flaunt some of the only TVs on display, including its 2018 4K OLED range, while nearby the awesome Technics SL-1000R turntable strutted its stuff. Totally new, however, was the Technics OTTAVA S SC-C50, a wireless speaker that wants to be a cut above the norm. Featuring Bluetooth, Chromecast and Wi-Fi playback, plus optical digital audio, USB and 3.5mm inputs, it sports eye-catching two-tone casework and uses the company's 'Space Tune' room calibration system to optimise its performance. Hi-res audio to 24-bit/384kHz is supported. No UK pricing yet.

www.technics.com/uk

CAMBRIDGE AUDIO

Cooked up to mark the company's 50th birthday, Cambridge Audio's Edge series was unleashed at the High-End Show in advance of a June release. These are the most sophisticated and costly components the company has ever designed, yet build upon ideas we've seen over the last few years, including combining network streaming and a pre-amp in the same chassis in the form of the £3,500 Edge NQ. This can be put to work with the £2,500 Edge W Class AB power amp, or you can use it as a conventional source with the £4,500 Edge A integrated amp. The demonstration system

(pictured right) looked gorgeous and sounded sublime, but has us hankering for a multichannel iteration.

www.cambridgeaudio.com

CHORD ELECTRONICS

The Choral Etude amplifier features what Chord Electronics bills as its first 'fundamentally new topology' in 30 years, resulting in a 150W-per-



Metaxas & Sins' GQT reel-to-reel tape deck (left) challenged JBL's L100 Classic speakers (top) for the 'most

retro-looking' product award...

For a break from hi-fi, showgoers could gawp at Panasonic's FZ952 OLED TV







channel stereo design claiming 'unrivalled dynamics and effortless control'. Such a premium ethos explains the £3,900 ticket. Also unveiled at the MOC was the Hugo TT2 (£4,000), a hugely revised version of the original TT DAC/headphone amp released in 2015. Both products go on sale in the Autumn, and feature the audio brand's trademark funky stylings.

chordelectronics.co.uk

METAXAS & SINS

The number of demonstration systems at Munich using reel-to-reel tape as a source has grown and grown (admittedly from a very low base). The good news for people who find vinyl just a little too cheap and practical is that you can now buy an all-new reel-to-reel machine, and guite the looker it is too. Made by Metaxas and Sins and called the GQT, it can be specified as a playback-only device for €35,000, or with recording ability for something over €40,000. You'll have to hurry, though, as the production will be strictly limited.

www.metaxas.uk

JBL SYNTHESIS

For something delightfully retro on a more modest budget (relatively speaking), perhaps the JBL L100 Classic will be of more interest. It's built to the same basic three-way design as the company's 1970s original (and includes the epically cool 'Quadrex' foam grilles available in vivid blue or orange), but crams in 40 years of technical innovation to create a speaker that is the perfect example of a retro-mod. The price will be around £4,000 per pair and the sound they produced at the show was utterly joyous. www.jblsynthesis.com

ESD ACOUSTIC

Every year there are always a few products and demos at the High-End Show that leave us slackjawed in admiration, and one of these in 2018 was the 'Dragon' five-way horn speaker system from Californian upstart brand ESD Acoustic. A riot of exciting shapes - many of which are constructed from decidedly expensive pieces of carbon fibre - and pricey field coil drivers, as a complete system it costs 'well over' \$1,000,000. At the High-End Show it could have done with a little more space to strut its stuff, but as a concept this got our attention.

www.esdacoustics.com

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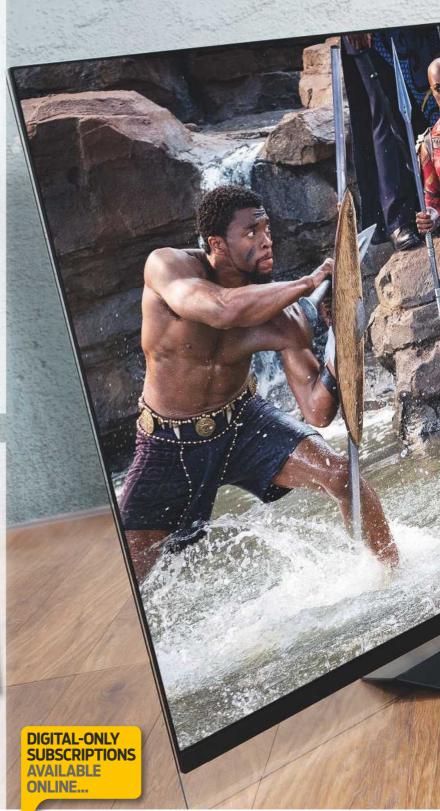
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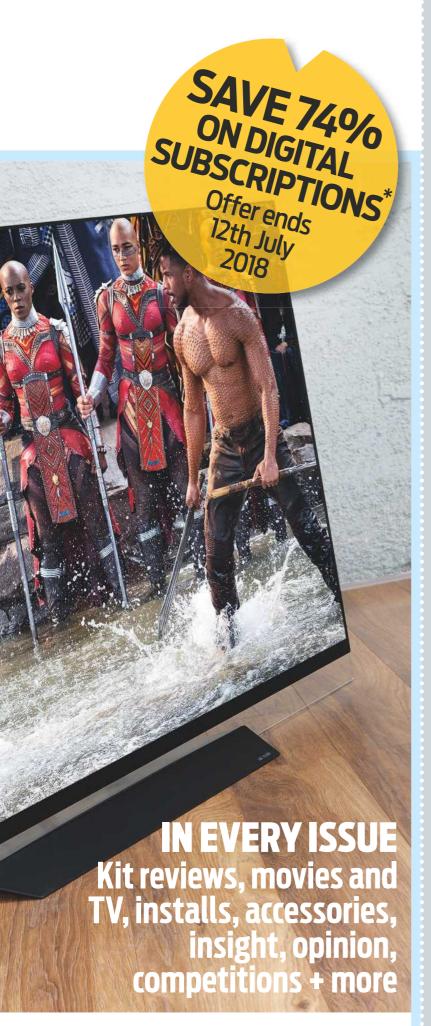
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High-class AV

Steve Withers immerses himself in 3D audio with Trinnov's 16-channel processor







In these days of 3D audio can you have too many channels? French company Trinnov doesn't seem to think so, judging by its flagship Altitude32 32-channel home cinema processor. But what if you're not a lottery winner, and your AV aspirations are a bit more practical?

That's where the Altitude16 comes in, offering the same processing power and room optimisation features as its larger sibling but based around a slightly more manageable 16 channels. Of course, this kind of high-end performance isn't cheap, and the Trinnov will cost you a wallet-busting £13.000. So what do you get for the cost of a family car?

In a nutshell, one of the most sophisticated home cinema processors on the planet. The Altitude16 not only decodes Dolby Atmos, DTS:X and Auro-3D using up to 16 channels, but also applies a level of room equalisation rarely seen outside of a professional studio. Trinnov uses a software-based platform rather than the usual off-the-shelf DSPs, allowing upgrades to the processor via internet firmware updates. That's a key feature in our rapidly changing digital world.

Pump up the volume

The Altitude16 certainly looks the part, with the kind of minimalist design and tank-like construction that screams high-end. There are rack mounts if you need them, a matt-black finish and a big display on the aluminium front panel. The volume dial not only feels pleasingly smooth as you turn it, but offers incredibly fine volume adjustments. A second dial doubles as an input selector and a control for navigating the menu system. The only other controls on the front are power, mute, back, select and menu buttons.

The rear panel is dominated by the 16 channels of outputs, all of which use XLR balanced connectors – no phono outputs on this baby. There are eight HDMI inputs, with the first three using HDMI 1.4, and the remaining five using HDMI 2.0b: use these for 4K/60p, high dynamic range (HDR10, HLG and Dolby Vision), REC.2020 and HDCP 2.2. There are also two HDMI outputs, and again one is HDMI 1.4, which could be a bit irritating.

Ethernet ports, coaxial and optical digital inputs and outputs, and analogue inputs using phono and XLR, round off the connections, along with a host of custom install features like 12V triggers and an RS-232 serial port. The presence of connections more commonly found on the back of a PC reveals the secret of the Altitude16's scalable processing platform: it's a highly-specified computer with audio capabilities, which is what makes the processor flexible, powerful and upgradable.

The PC heritage of the Altitude16 extends to a fairly noisy cooling fan that I could distinctly hear during the quieter moments in movies. Yet it's almost certainly not going to be an issue for most people, as this is the kind of AV hardware that goes into a dedicated equipment rack, or even a separate room.

As well as decoding Atmos, DTS:X and Auro-3D, the processor supports their respective upmixers. In the case of Dolby Atmos, the Trinnov can deliver 16 discretely rendered channels up to 9.1.6, with additional wide channels and top middle channels. For DTS:X it can decode all configurations up to 11.1 channels, which is the current maximum the format allows. In the case of Auro-3D, it can decode the format's full-monty 13.1 layout.

- 1. Trinnov's crisp display dominates the processor's front panel
- 2. The supplied remote handset covers basic control functions





The Altitude16 comes with a fairly basic remote that is solidly made and, once the processor has been set up, provides a reasonable level of control. But the chances are it won't get much use, because this product is aimed squarely at the custom install market and is more likely to form part of an overall control system. The Trinnov supports automation via IP and RS-232 protocols, and also has a built-in UPnP/DLNA digital media renderer.

The front display and remote provide access to a basic menu system, which allows simple tasks like selecting different decoders and presets. The hardcore setup is performed via a graphical user interface that can be accessed one of two ways; directly using a display, mouse and keyboard connected to the Altitude16, or remotely using a VNC client. You can also control the processor remotely using an internet browser, but this is a light version with limited access.

I connected the processor to my home network via an Ethernet cable, and within seconds I had total control thanks to a VNC client link via a MacBook Pro. If you prefer, you can also control the Trinnov using a tablet or smartphone. I love the fact that since you're controlling the processor remotely, you don't even need to be in the room while you set it up and run measurements. The user interface is also surprisingly easy to follow considering the complexity of this platform, with plenty of helpful sidebars that explain what to do and why.

In most cases a dealer will install and set up the Trinnov, but if you fancy having a crack at it yourself then I recommend you make a strong cup of coffee and actually read the 162-page manual. A wizard does take you through the optimisation process though, and if you get really stuck someone at Trinnov can remotely access your processor and help you out.



I installed the Altitude16 in my dedicated cinema room, and employed a Trinnov Amplitude8m power amplifier (eight-channel), provided by Trinnov, for the front, centre, side and rear speakers. I used my own Arcam P429 four-channel power amp to drive the overhead channels. I also have two active subwoofers at the front of the room. That's thirteen channels if you're counting, which were all connected using XLR cables. By the time I'd finished, the back of my equipment rack looked like the proverbial half a plate of spaghetti.

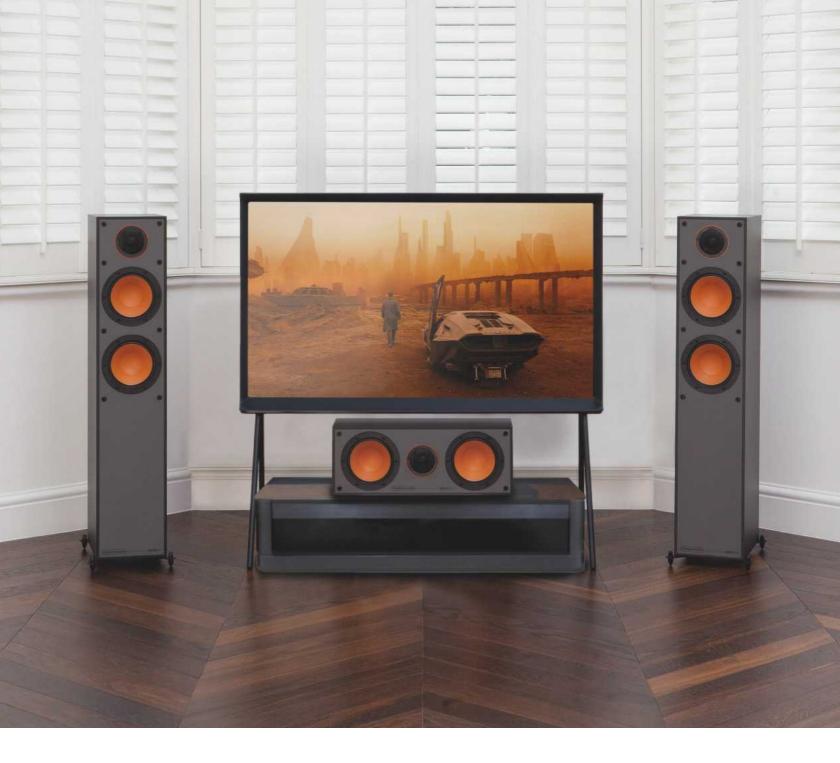
'He'll save everyone of us!'

The Altitude16's big selling point is Trinnov's Optimizer, an advanced speaker/room equalisation technology. It uses a custom designed 3D microphone that looks more like a prop from a Flash Gordon movie. The optimisation process itself involves initially placing this mic at the 'reference point' (sweet spot), ensuring that it's completely level, and aiming the LED light on the front at the centre speaker.

3. Trinnov debuted its Optimizer technology in 2005

4. The Altitude16 decodes Dolby Atmos, DTS:X and Auro-3D





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Using the setup wizard, you initially select the layout (which in my case was 7.1.4) and allocate each of the processor outputs to the relevant speaker or subwoofer. You can input the dimensions of your room, and the processor shows you a three-dimensional image with speaker and sub placements. You then set crossovers using Trinnov's comprehensive bass management system, which allows separate crossovers for each individual speaker.

After that you just run the measurements, and let the Optimizer work its acoustical magic. The 3D microphone

'The Altitude16 keeps bass taut, smooth and controlled – but also deep enough to liquify your insides'

takes spatial measurements of your speakers, subwoofers and the room itself, after which you move the mic to a different position, ensuring

that it remains level and is still aimed at the centre speaker. You then take a second set of measurements and so on. The more measurements you take, the more accurate a spatial representation of your system the Trinnov can calculate.

The key to a seamless 3D soundfield are speakers that are well-matched in terms of their amplitude and time domains, and this is where Trinnov's Optimizer comes in. It ensures that the presence of the room has been removed from the acoustical signature, that bass is perfectly integrated, and that the speakers are tonally balanced. The Altitude16 can also re-map your speakers to virtually place them in their ideal positions, a very cool feature.

Once completed, the Optimizer shows you all the results graphically, including three-dimensional representations of the positions and heights of your speakers and subs. There are also graphs of their response, amplitude, reflections,

phase and impulse measurements. You can create different presets for different speaker configurations, seating positions and audio formats, and can save up to 29 presets.

There's so much you can actually do with the Altitude16 that I can barely scratch the surface here. It really is a tweaker's delight, and you could spend yonks fiddling about with different settings, layouts and crossovers.

Fiendishly flexible

Having tested every room equalisation system available, I can say with some confidence that Trinnov's Optimizer is the best example I've come across. Its closest competitor is Dirac Live and while that takes a similar approach, the Optimizer offers more nuanced control, greater subtlety and infinitely more flexibility.

There's always a worry that the law of diminishing returns will apply to these high-end systems. Do they really make a difference and can they justify the cost? In the case of the Altitude16 I'd say it does. This processor has a sense of cohesion and transparency that simply amazed me.

When you consider the processing and amplification involved, it was always going to sound good, even with the optimisation turned off. But as soon as you turn it on, the soundfield is transformed, the room itself disappears, and the audio displays a complete sense of realism.

I've heard the *Amaze* Dolby Atmos trailer in Dolby's own screening rooms, so I know exactly how it's supposed to sound. The Trinnov rendered it perfectly, with a bird fluttering seamlessly across the ceiling, rain falling around me and thunder rolling smoothly through the room thanks to tight and controlled bass. It sounded exactly the same as it did when Dolby played it to me, and I can't think of higher praise than that.

Since Trinnov's Optimizer is supposed to perfectly match a disparate set of speakers, the obvious test





was *Gravity* (Blu-ray) with its highly directional Dolby Atmos soundtrack. The Altitude16 aced this test, and George Clooney's voice remained tonally identical as he zoomed around the room on his jetpack during the film's opening sequence.

Another key aspect of the optimisation process is bass management, and what better test than *Blade Runner 2049* (4K Blu-ray). The bass here is terrifyingly deep, and I've had lesser systems throw in the towel before the opening credits have rolled. Not so with the Trinnov, which handled the bass like a champ, keeping it taut, smooth and controlled but also deep enough to liquify your insides.

Next up was the 4K platter of Saving Private Ryan, with its Dolby Atmos remix. I've watched the Omaha Beach opening countless times but the Altitude16 simply blew me away, if you'll pardon the pun. I was there on that soggy sand and the experience was utterly visceral, putting me as close to battle as I ever want to get. Machine-gun fire strafed my home cinema, shells flew overhead, explosions hit with a perfectly timed percussive impact, and the processor created a completely believable hemisphere of sound. There was a precision and timing to the placement of effects that was breathtaking, but within the fog of war, dialogue remained clear and focused onscreen.

Lest you think it's all about Dolby Atmos, I had another Steven Spielberg classic to hand in the shape of *Jurassic Park* (4K Blu-ray) with its new DTS:X soundtrack. The T-Rex attack was the go-to demo scene before Tom Hanks hit the Normandy beaches, and its dino-mayhem remains a masterclass in sound design.

The bass that heralds the approaching threat was sublime, building from nothing more than a sensation to a room-shaking thud. The high-frequency twang of the breaking fencing was delivered with precise transients,

SPECIFICATIONS

DOLBY ATMOS: Yes (up to 9.1.6) **DTS:X:** Yes (up to 11.1) **AURO-3D:** Yes (up to 13.1) **THX:** No **MULTICHANNEL INPUT:** No **MULTICHANNEL PRE-OUT:** Yes. 16-channel XLR **MULTICHANNEL OUTPUT (CLAIMED):** None — processor only **MULTIROOM:** No **AV INPUTS:** Yes. 4 x digital audio (2 x optical and 2 x coaxial) **HDMI:** Yes. 8 x inputs (5 x 2.0b); 2 x outputs (1 x 2.0b) **VIDEO UPSCALING:** No **COMPONENT VIDEO:** No **DIMENSIONS:** 438(w) x 138(h) x 439(d)mm **WEIGHT:** 11.3kg

FEATURES: Trinnov Speaker/Room Optimizer; 3D measurement microphone; multi-subwoofer management and active crossover calibration; 24-bit/96kHz native processing; wizard for setup and calibration; VNC remote control; software-based upgrades over internet; UPnP/DLNA renderer; Roon ready

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and the T-Rev's roar could burst your eardrums without ever sounding harsh or losing definition. The overall soundfield was so spacious that the ceilings of my demo room seemed to collapse, leaving the sound of rain falling all around.

I don't have many Auro-3D discs [who does – Ed?], but since the Altitude16 can decode the format, I created a second preset just for testing it. Auro-3D uses height, rather than overhead speakers, but thanks to some cheeky realignment and Trinnov's remapping feature, I was quickly in business. I put on the WW2 fighter pilot flick Red Tails (Blu-ray) and the aerial dogfights revealed the processor's incredible ability to seamlessly move sounds from channel to channel.

As for its ability to upmix normal 5.1 and 7.1 tracks, I popped Interstellar into my player and used Dolby Surround – because of the three upmixers, it's the one that uses the most channels. I certainly didn't regret that decision, and in the scene where Endurance tries to escape the gravitational pull of a black hole, the soundstage became alive with effects emanating from... everywhere.

Trinnov's got talent

Trinnov has been at the forefront of 3D audio since the beginning, and that shows with the Altitude16. It's the most sophisticated and flexible processor I've encountered, and while not cheap it certainly delivers the goods, creating a seamless immersive audio experience thanks to its 16-channel talents.

It's obviously aimed at the custom installation market, where its £13,000 price will be less of an issue, and to get the best out of this processor you really need a dedicated home cinema and a professional setup. However, if you're lucky enough to be thinking of the Altitude16 as a viable option, then I guarantee you won't be disappointed ■

HCC VERDICT

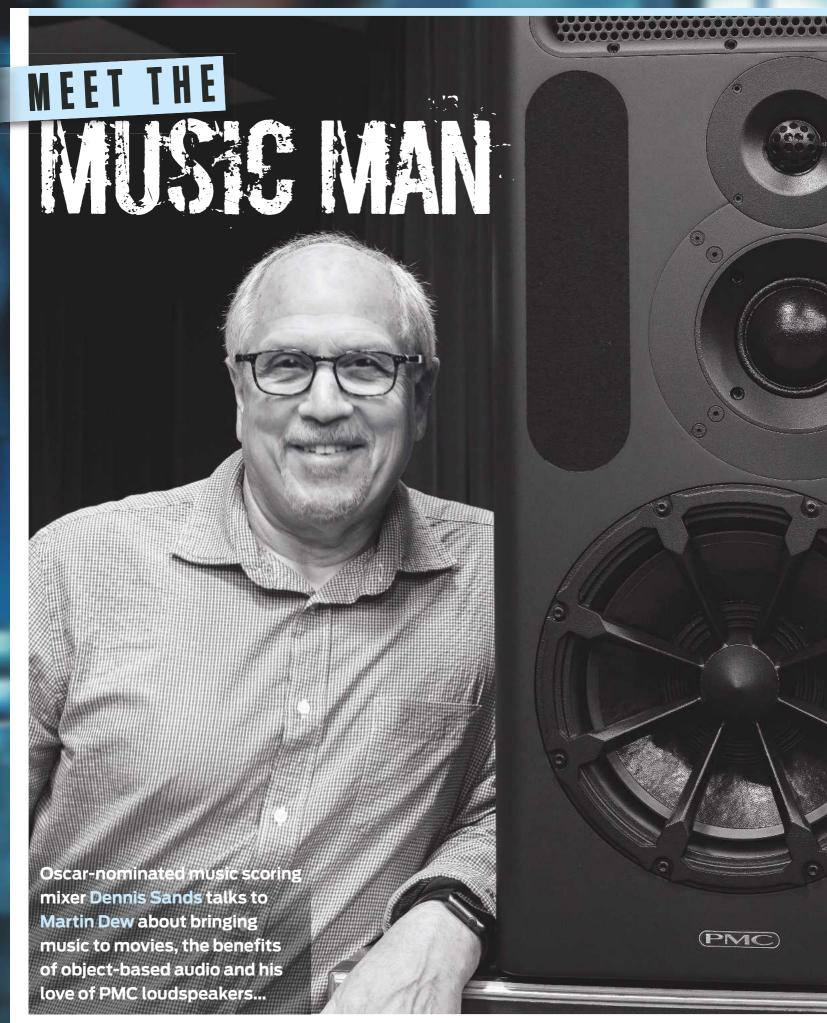


Trinnov Altitude 16

→ £13,000 → www.trinnov.com

WESAY: Trinnov takes multichannel audio to another level of immersion with a high-end home cinema processor that is as sophisticated as it is flexible.

5. As befits a high-end processor, XLR jacks are used for its analogue outputs





First: can you explain the role of a music scoring mixer?

Basically, it's quite a big job, and the first part of it is starting a conversation with a composer. I find out what the scope of the score is, what the composer has in mind, what the construction of the score is. Is it all orchestral, or acoustic, are there electronics involved, or is it primarily electronic? Or is it a hybrid score, both electronics and orchestra? Are there any specialised instruments? For example, is it a solo piano-driven score, or are there other instruments that need to be isolated, or treated in a certain way?

So I'll get a real concept of what the score is. I'll ask for demos of the cues themselves, and quite often — in fact, almost always now — composers mock up their scores for the director to put in; he or she will send this music to the director who puts it in in the editing room, so they can get a sense of what the score is. They'll listen to each cue to approve or ask for changes, and to see how it works in the movie.

I get a sense of what the score is, and from there I conceptualize how I want to set up the studio; it's my responsibility to determine what the setup is on the scoring stage, or in the recording studio. I have to describe the setup, but also what microphones I'll use, other electronics, how I want them plugged in, if there's any other outboard equipment like compressors, limiters, reverbs, that kind of thing. All that's done for the recording phase.

While the recording is being done, I'm in the control room listening, obviously. I'm very involved in the dynamics or the performance — which I guess is a better way of putting it — of the music. For example, if I hear there's a particular cue being recorded, and everyone's recording live, and the trumpets are really loud in relation to everything else, I'll ask for a dynamic change and have the trumpets play less, or if there's some big instrument like taiko drums in the percussion — and it's just overwhelming everything else — I'll suggest that we record that separately. It's things like that, which I know are going to be an issue later on in the mix or in the dub.

Does that make you effectively the 'music producer' for the movie?

In a way. I have so much experience now of doing this that I can look at the picture and I can almost hear what it's going to sound like in the final dub, even though when we're scoring generally we're looking at the picture, but not hearing any other sound.

Occasionally we'll play music back against the dialogue, and that's all there is, so rarely do we have any sound effects playing along with it. Let's say there's an exterior street scene and there are people talking and maybe whispering to each other, and there's very light strings playing underneath it. I know that if we hear any street ambience, that music is going to disappear, so I'll recommend to the composer that we need to get a little more sound out of the strings. They can't play quite so softly, otherwise it's just going to disappear in the final dub.

Things like that are important to guide the recording process. Once it's done, there's not much you can do outside of adding electronic samples, which would change the sonic quality of it.

All this is part of my responsibility as a scoring mixer — in the recording process. The mixing process is a whole other thing. Here my responsibility is to achieve a good balance between, say, orchestra and electronics. It took quite a bit of time to learn how to do that, because the issue of balancing electronic with acoustic instruments, especially an orchestra, is that electronics typically have a lot of presence to them and if they're too loud against the orchestra, the orchestra will sound small. It won't have any impact. To get the balance of the two is challenging.

Do you talk to the composer a lot?

Quite a bit, especially in the recording process. It's very popular these days to record in what we call 'stripes' – doing separation. Let's say we start with strings and woodwinds, and maybe harp, and then we'll add brass, and then we'll add percussion to that... These are all recorded separately.

The positive side of doing that is that it gives you control of those separate elements. The negative side of it is that there are often intonation problems, so the tuning of, let's say, the brass against the strings can be a real issue. Also, the timing is more challenging for the musicians in order to get everything in sync, so very often after we're done recording, we have to edit the various elements together so that they fit together rhythmically. So, there's positive and negative.

Also, the dynamics are different, and just sonically it's different. For me, personally, I much prefer the sound of all the instruments recorded together. Also, for musicians, especially orchestral musicians, they learn how to play their instruments sitting with everybody else. They adjust their intonation and dynamics and performance based on hearing everyone else in the room together.

When you now take that apart, and you separate them out, and their reference is headphones, which is a much different experience, it's challenging for musicians. It really is.

Do you have a background in classical music?

Well, I didn't study formally. I've been a fan of music in general all my life. I grew up with rock and pop, but I always loved jazz, and I really enjoy classical music, and listen to every kind of music now.

I enjoy listening to a lot of hip-hop and pop music because there are a lot of interesting sounds; the way certain reverbs and effects are used. I steal some of that, if you will, for hybrid scores, to help create a sonic environment.

But with classical music, you hear composers reference a lot of other classical composers in their scores. One of the obvious ones is Aaron Copland in Western-type scores, or that sort of sweeping visual genre.

There are many others as well, certainly Mozart, Beethoven and Bach and so on. You can hear elements of those composers in many, many film scores, not just contemporary ones, but older ones. It's not in any way uncommon for those great classical composers, their concepts and visions, to be integrated into film scores.

Sounds good

HCC readers pick their favourite film scores...



Star Wars, without question. John Williams is the master at creating emotion with his music. Daft Punk's score for *Tron: Legacy* is brilliant too, as is *Prometheus*.

Stewart Heed

Gladiator – always brings a lump to my throat.

Nick Parks

Predator, Predator, Predator. Del Palmer



Superman: The Movie. Obviously. John Hobart

Inception. It's a fantastic soundtrack.
Steven McKeown

Anything by Hans Zimmer! He's a genius!

Martin Evans



To My PMC Family we pant 20 years

Has the development of 3D audio – Dolby Atmos and DTS:X – and before that, 7.1 and 5.1, changed your approach to mixing?

Absolutely, it's changed it a great deal. Let's talk about the history and evolution, at least from my perspective. I've been doing this for a long time, so when I started out movies were mono. That was it. And also you had to deal with that awful Academy filter, or curve, which was brute force noise reduction. They just basically filtered out all the high frequencies and low frequencies, and you had this sort of midrange thing. It was okay for dialogue and sound

effects, but it absolutely killed music.

Then when Ray Dolby came along and introduced matrixed four-channel surround, and in conjunction with that he had this noise reduction system, it just

revolutionised mixing. Again, it was most favourable for music. You suddenly had full dynamic range and frequency response. And then it went to digital.

There were inherent problems with the matrix system — it was wonderful for frequency response, but it was hard to control channel placement. Let's say you'd have a stereo synthesized pad. What happened is, depending on the frequency content, it would just sort of move around. Maybe you'd want to place it left and right in the front monitors, and what would happen is that a lot of it would end up in the surrounds. When 5.1 discrete digital was introduced it was a miraculous step for us, because then with all of our assignments we could absolutely control everything. Nothing moved around, they were all discrete channels. Plus, we had this LFE channel, as an added plus. That was a great thing, and that changed mixing completely.

along, and instead of just a stereo surround channel, we had four channels of surround. Each format has changed mixing for everybody. And each step, sonically for films, and how they translate to home theatres, has gotten better and better.

audio, are you sending music up to the ceiling? I do occasionally. There are some aspects where it's really great. I look

With object-based

subwoofer. If you use it occasionally, it's very effective, and it's a really interesting additional added aspect, but if it's constant, it sort of disappears.

at the ceiling channels as I look at the

I've experimented with it a lot. If I have, let's say, overall microphones which I record with an orchestra, and place them up on the ceiling, so the entire time the orchestra's playing I also have these ceiling channels playing, it tends to actually mono out the orchestra. It sounds smaller.

But I found that if I use them occasionally, it's very effective. So, what I like to do is, if I have a choir, I like to move it up towards the ceiling. It separates just a little bit, but it gives it a wonderful ambience. Again, if it's used occasionally, to me anyway, it's a wonderful effect. It becomes more interesting.

It's the same thing with a subwoofer. If you hear it every once in a while, it has a great deal of impact and it's fun and interesting, and feels very cinematic. The same thing with sound effects or anything — if it becomes constant, then it's just like wallpaper.

The definition is amazing in these object-based, 3D formats. Atmos, which I have most experience with, is quite stunning, actually. But let me say one

thing: not every director loves Atmos. I work with a couple who feel that everything should be up on the screen. They're not enthralled with so much sonic information going into the surrounds. Other directors absolutely love it and want as much of it as possible. It's a sensibility, it's whatever that taste or sense is for each director. Like anything, it's not for everybody.

You could say the same thing about 3D imagery. Personally, I love it for certain kinds of projects. It was fantastic for *Gravity* and *Avatar*, movies where it's really meaningful. But not for every single movie. Maybe you could say the same about Atmos.

Looking at your list of credits, you keep getting asked back by the same directors. There's the Robert Zemeckis/Alan Silvestri combo, and Sam Mendes/Thomas Newman...

Both of those are great composers. They're filmmakers, really. They understand the language. So much of their job is to have a conversation with the director, understand what the director wants to do, the emotion that the director's trying to portray, and interpret that musically. That's a part of their job, and they're both great at that.

And they request you to be part of that team...

Gratefully, they do. I met Alan when we worked on the TV show *CHiPs*. It was a weekly show and basically the concept was these guys riding on motorcycles, finding bad guys, and what really drove the show was the music.

I had a studio in Hollywood at the time, and we were in the first really contemporary recording studio to be available for film/TV work in L.A. At the time, all the film studios were kind of antiquated. They didn't have modern equipment and couldn't create the kind of sound we wanted. This show wanted a contemporary sound. Anyway, I met Alan and we hit it off and have been working together ever since.

Then in 1984, Alan met Bob Zemeckis. Bob was doing this movie and there were two composers hired, and they just didn't work out. Bob was looking for somebody. The music editor at the time called Alan and said, 'Look, I'm working on this movie, and the director's not happy. If you put a demo together, send it over to me, I'll play it.'

The movie was *Romancing the Stone*. Alan got the call at like 9am, put something together, made a cassette and sent it over. Bob heard it and loved it, and said, 'I want to meet this guy.' And then Alan dragged me along.

Alan is not only the composer. Bob shows Alan the movie very early in the process, and they talk about it and go back and forth. So, you know, it's a great relationship those two guys have. Alan's really part of the filmmaking process.

Onto hardware. You're now using PMC's MB3-A speakers...

Yes, I've used PMCs for a long time. Twenty years, maybe. I know I mixed even *Forrest Gump* and *Spider-Man* and a bunch of movies on those monitors. And

Sands' long-term partnership with Alan Silvestri began with TV show *CHiPs...*



...and was followed by classic adventure flick Romancing the Stone

then recently, just last year, I got the new MB3-As and Maurice [Patist, President Sales & Marketing USA, PMC] took my MB1s back and wants to put them in his museum!

I really like them a lot. I find they translate very well, first of all, but also they're very realistic, and they can be very unforgiving. So, if I have any issues with anything, I'll hear it right away. If it sounds good, I'll know it. If it sounds bad, or if there's a problem, or if I need to adjust something, I'll know it. They're very definitive and the soundscape is big, and there's a lot of depth to them. I'm very comfortable with them.

Do you have a set at home or do you use them in your studio?

They're in my studio. I use them as a home theatre reference. If I'm doing television or non-theatrical type projects for stereo mixes, doing soundtracks, and I'm going back and forth... I have a large film chain in my studio, so I actually have four monitor systems that I use, but these I use in my studio.

Do you monitor in different-sized rooms, so you know how a score will sound in various environments?

I'm primarily at my studio for mixing. If I'm recording, I'm at different studios, some in L.A., some in Europe. But for mixing purposes, in my studio, I have basically two systems that I use. I have the large film chain, and the PMC system, and they're both great. The PMC setup is full-range. I specifically want them for that purpose. I want the full-range aspect. That gives me a different kind of information from a film system which is not full-range. The film chain has the X-Curve built in, whereas the PMCs are basically flat, which I like also.

When you're listening to the PMCs, you're thinking about how it's going to sound in the home?

Yes, primarily. If it's a TV show, quite often television is mixed now in 5.1. And home Atmos is now gaining popularity and ultimately that's probably going to be one of the primary formats for the home.





What technologies and equipment do you use in the mixing suite?

I use a combination of analogue and digital. The storage format, if you will, is digital.

All studios are so frightened of piracy that security is a huge issue. So, for example, I've been working on the *Avengers* movie [*Avengers: Infinity War*], and Marvel Studios is by far the most... 'protective' of its assets. It sent one of its IT guys to my studio. We walked through the studio and he pointed out, 'We'll need you to do this and this and this and this.'

I have a very high-end firewall in my studio and it's monitored 24/7 by a company that sees the traffic in and out, and notices if there's, let's say, an odd address trying to get through. They won't be able to get in, but it will also notify the authorities, the FBI, for example. So, it's a protected system.

Secondly, all my systems are completely disconnected from the internet on my Pro Tools systems. There's no access in or out. And then the picture resides on an encrypted hard drive. When I'm done each night, the hard drive goes into a safe. So there's a lot of security!

When talking about *Ready Player One* and *Avengers*, they're all recorded digitally at 192kHz, so it's a very high sample. But interestingly, in the music world, it's still very analogue. It's analogue consoles that it's recorded on, and the microphones essentially are analogue. They go through analogue pre-amps, and it's converted to a digital format and stored on Pro Tools systems.

Prior to us all using Pro Tools, we recorded on analogue tape. And typically an orchestra, every piece of music, would be on two 24-track machines. So you had two two-inch reels, running simultaneously, which would record about 15 minutes or so end-to-end on each reel. We had these huge stacks of tape. It's heavy, it's big and bulky. Avengers was recorded in London and mixed in my studio, and all that tape would have had to be shipped. Now, basically, all these digital files are essentially e-mailed to us. They're uploaded and we download them from the server, and we get it the same day, as opposed to a week later. That's a huge advantage. Plus, you don't need to make back-ups. Everything is a digital copy, there's no generation loss.



Sands mixed the score for recent Spielberg sci-fi Ready Player One



Avengers: Infinity War: another Sands/ Silvestri music production

What's your favourite film score?

Oh boy! That's a tough question.

I've been lucky — I've worked on a number of great ones. You know, like I said, *Romancing the Stone* was so important to me personally and professionally. *Back to the Future...* There are some with Thomas Newman that are great, and some with Danny Elfman that are great.

There's a score with Danny Elfman that I worked on, where the movie wasn't a huge hit, and it should have been – *Big Fish*, which has an amazing score. *Spider-Man* was another great score he did. Obviously, Tom Newman's scores for *American Beauty* and *The Shawshank Redemption...*

And like I said, with Alan, there's been so many. Just recently I worked on *Ready Player One* and *Avengers: Infinity War*. You know, to pick one – and I'm not trying to be evasive – honestly it's an impossible question to answer.

And by the way, you talk about great scores... what about the iconic scores? What about the score of laws?

Jaws has so many layers — it's not just the der-dum-der-dum — it's the symphonic passages, the chases...

Absolutely, it's a real demonstration of the power of music in movies... you listen to just two bars. People don't necessarily need to know anything about film music or music in general, but when they hear that, they think of the movie and they're afraid to go in the ocean. It scares them in a fun way, not in a terrifying 'I need to hide under the couch' way. You know, they think of the movie. It's really powerful.

Some argue that film scores are getting less memorable. People can hum *Star Wars*, but not *Avengers*. You don't come out of the cinema whistling the tunes...

I would tend to agree with that. Listen, it's up to the director to want a memorable or melodic score. For some reason, the trend is away from melody, and towards almost sound design. It's hard to differentiate the music score from the sound design. That, to me, is diminishing the power and the opportunity that a film score can present.

Nobody ever leaves a theatre humming the sound design, but a great melody stays with you, and it reminds you of the movie, that experience. When a film score moves away from a melodic component, it certainly becomes less memorable. A drum loop, no matter how great it may be, isn't memorable – you'll hear it and it's hard to differentiate it from anything else.

By the way, Avengers does have a nice melody. Alan Silvestri wrote the very first one. He's very melody-oriented, as you know. Back to the Future is another of his greats, and certainly there's been others – Forrest Gump, talk about an amazing melody! Probably a lot of people remember where they were when they first saw that movie. It had that kind of impact and certainly the melody, the theme, is so reminiscent of that



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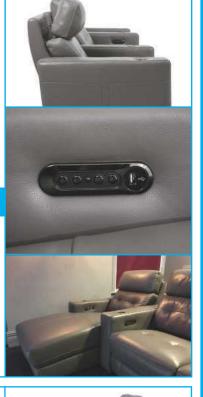
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After the initial planning stage, the installer's first

the room for its home cinema transformation

task was to strip out the existing kitchen and prepare

THIS PROFESSIONAL PROJECT by South East-based installer Cinema Rooms involved a big transformation as the space designated for cinematic conversion used to be a kitchen, the owner having recently had a new one built in an extension. So out went the fridge, oven and sink and in came an Atmos-compatible audio system and laser-powered projection.

An Epson EH-LS10500, offering HDR playback and 4K upconversion, plus lens memory function for shifting between 16:9 and 2:40.1 ratios, works in tandem with a 120in, 4K-optimised CinemaScope screen from Screen Research, the largest screen possible given the room's dimensions. For speakers. the cinema uses Artcoustic models. 'We took the client to the Artcoustic showroom in Chelmsford to audition speaker options, and specified a 5.1.2 Dolby Atmos system,' says Cinema Rooms' director Simon Gregory. 'We use Artcoustic as our primary brand as the range ticks all the boxes.'

Rounding out the equipment is an Integra DRX-7 AV receiver, Panasonic DMP-UB900 4K Blu-ray player, Sky Q and Sonos connection.

The light touch

Lighting and design touches ensure the room feels far removed from its kitchen origins. To control the main illumination and star ceiling, Cinema Rooms used Rako lighting with DMX and LED module controllers; to make everything work as seamlessly as possible, an RTI system, with an iPad interface, was integrated. 'The family really like the ease of use,' explains Gregory.

Crushed velvet on the walls and chairs, a tidy front-wall AV cabinet and a sweet/snack dispenser finished the space off. The cinema is now in frequent use as a family space for kids' TV, Netflix, sports and movie nights ■

A. Adding some atmosphere

A pair of in-ceiling speakers deliver 3D audio height to top off the 5.1 system

B. You've been framed

With a fixed-frame screen on the owners' wishlist, a 120in 2.40:1 model was chosen to maximise the space available, with the room's LCR speakers mounted behind. The Epson projector's lens memory skill enables automated ratio switching



A ceiling soffit was constructed to house the room's dramatic LED and star ceiling lighting. An existing window was retained, but fitted with black-out blinds



C. Reach for the stars The Rako-controlled star ceiling is a family favourite, adding a luxury touch

D. Cabinet meetingRather than racking hardware in a separate room, AV furniture was installed below the projector screen, giving easy access

E. Double bass

Providing LFE is an Artcoustic on-wall subwoofer. The Spitfire Control 2 features dual 10in woofers and claims a 20Hz frequency response

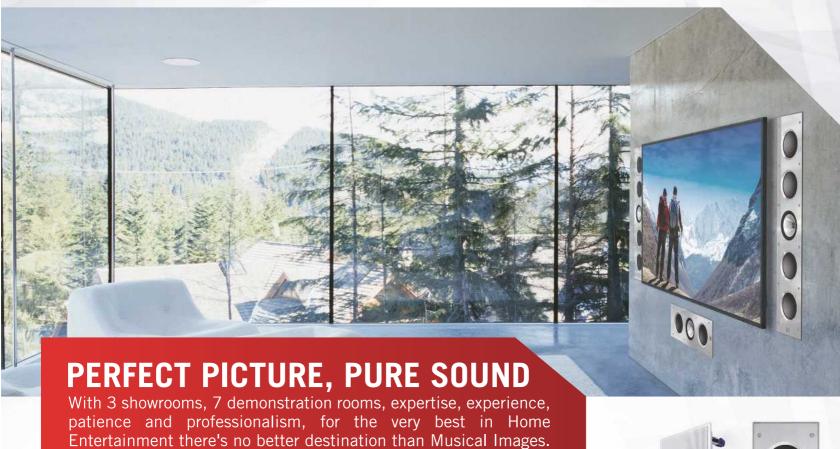
F. Sweet dreamsThe room may no longer be a kitchen, but you don't have to trek far to grab an in-movie snack...

G. Personal previewThe installer produced full renders of the project so the owner could see how the finished cinema room would look











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Midway through the install, and the custom cabinetry is in place, while the ceiling 'raft' is ready to house the Starscape fibre optic panels

NOT ALL CUSTOM install projects are largescale and premium-priced, as this compact theatre designed by Yorkshire-based Bespoke Home Cinemas illustrates. Given only a 3m x 3.2m space to work with (previously an unused spare room), the company set to business specifying a setup, around a relatively tight (and fixed) budget, for a film fanatic who wanted seating for four and a 'real' projector-led cinematic experience.

In came a 5.1 speaker system, mixing Artcoustic front channels with SpeakerCraft surrounds and woofer and driven by an Arcam AVR. A wall-mounted 80in projector screen and Epson Full HD model provide the visual fun. Sources are a Blu-ray player, Xbox and Sky TV (fed via HDMI over Cat6 from the living room downstairs).

Helping this bijou room stand out is the attention to detail. Control4 automation aids ease of use, the star ceiling adds sci-fi glamour (the owner's favourite movie is *Aliens*) and the Signature recliners deliver a level of luxury. It's certainly a lot more exciting that a spare room...

A. No TV here...

Allowing largescale visuals at the fraction of the cost of a flatscreen TV is this fixed-frame 16:9 ratio screen from Projecta. It's used in conjunction with a ceiling-mounted Epson EH-TW6100 projector

B. ...and no clothes here

Bespoke Home Cinemas modded an existing in-built wardrobe to become a home for the SpeakerCraft subwoofer, Blu-ray collection and movie memorabilia

C. Wall of sound

Artcoustic's slim Diabolo on-wall speakers are used for front L/R channels



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Powerful new processing boosts the picture quality of LG's already impressive OLED TVs, says John Archer

LG shines a light on 4K HDR

A combination of gorgeous designs, a five-strong range targeting different buyers, and impressive picture quality improvements saw LG's OLED models make huge inroads into the mid-range/premium TV market last year. With LCD/LED technology fighting back in emphatic fashion through direct-lit contenders from Sony and Samsung, however, the pressure is on LG to keep moving OLED forwards.

Cue the OLED65E8, LG's new upper mid-range 65in display. Is this yet another progression for the company's OLED technology, or did 2017 already show us the best it can do?

Design refresh

LG has certainly gone to town with design in 2018. This TV looks radically different to its E6 and E7 predecessors. The chunky, integrated soundbar of those earlier models has been replaced by a slinky see-through glass sliver that clamps into an impressively heavy-duty desktop stand.

The front-firing speaker is now relegated to a small black 'band' between the screen and the new glass neck, while the glass trim that protruded beyond the left, right and top edges of the E7's screen frame has been reduced to the point where you barely notice it. This is a bit of a shame, for me, as it leaves three edges of the screen looking relatively prosaic. At least OLED's typical state-of-the-art feel is restored by the slimness (a few millimetres) of the majority of the TV's rear.

Despite its reduced speaker space this set still carries built-in Dolby Atmos decoding, yet doesn't do as convincing a job of delivering the format as its predecessors. Bass sounds good to a point but becomes forced at lower extensions, and the sound tends to become swallowed when pushed hard, rather than opening up. There's a wide and high spread, though, albeit in a flat 'wall' effect, and a decent amount of attack from the forward-facing drivers.

In fact, this audio performance no longer feels especially premium by general TV standards. A pity when we're talking about a TV that's definitely got a premium price tag (£5,000, although World Cup promotions have seen it reduced to £4,500) attached.

Fortunately, the OLED65E8 makes up for its slight backward audio step with a surprisingly substantial step

forward with its picture quality. Why surprising? Because I'd honestly wondered if there was much further LG could take its current technology following its game-changing 2017 efforts. It turns out, however, that it had an ace up its sleeve in the shape of a new processing engine.

Picture polish

Dubbed Alpha 9, this new processor works well to tidy up most of the 'rough edges' that cropped up on occasion when viewing LG's E8 models. For instance, there's now hardly any sign of the strange vertical banding sometimes witnessed with mid-dark or detailed dark scenes on the E7. The early cockpit sequence in *American Made* (Ultra HD Blu-ray) here looks almost clean, rather than as if it's appearing through chunky prison bars. A potentially tricky dark scene in a church in the wonderful new 4K Blu-ray of Steven Spielberg's *Saving Private Ryan* also looks even and natural.

Improvements are detectable in the way the OLED65E8 handles complex areas of HDR colour. The blended shades and hues of Mad Max: Fury Road's desert skies (Ultra HD Blu-ray) exhibit little noise, while the subtle toning of the leaden skies and grey, bombed-out buildings during Saving Private Ryan's final act is unblighted. It's also noticeable that this 2018 model suffers less with blocking noise in the very darkest parts of its pictures than the E7 did. This is particularly true if you stick with the E8's Standard HDR image preset.

LG's 'bug fixing' continues with the TV's motion handling. Pans across the cemetery in *Saving Private Ryan* still look a bit billowy without LG's TruMotion processing in play, and there's a little shimmering around the edges of moving objects if you do activate it. Yet the extent of this digital intrusion is less than I've seen before with LG sets, and the tools are present within the Custom TruMotion

AV INFO

PRODUCT: 65in 4K HDR OLED TV with integrated Dolby Atmos audio

POSITION:

In the middle of LG's current TV range, above the C8 series

PEERS:

Samsung QE65Q9FN; Sony KD-65AF8

1. Again, LG's design emphasises the OLED screen's slim dimensions

2. The remote offers physical buttons and onscreen pointer



menu to help you strike a nice balance between reducing judder and keeping noise to a minimum.

Maps to the stars

I've saved the best of the OLED65E8's picture quality improvements to last. A new Dynamic Tone Mapping system analyses incoming HDR10 signals and attempts to add to them the sort of dynamic scene-by-scene metadata present in the Dolby Vision premium HDR format.

Powered by that Alpha 9 processor, this Dynamic Tone Mapping feature gives HDR10 content (the majority of 4K Blu-rays) more punch than before. It raises the average brightness level of *Saving Private Ryan*'s daylight sequences to levels where at times – provided the image isn't almost uniformly bright – they seem to match the intensity of Samsung's Q9FN models [see *HCC* #286/#285].

This significantly brighter approach is achieved without compromising the obligatory, deep black levels for which OLED has long been adored by home cinema enthusiasts. So, for instance, when the troops in Saving Private Ryan walk along a ridge at night, the sky lights up with lightning that looks more intense than you might have expected, but the blackness of the surrounding sky is every bit as rich as you'd hope it would be.

Sequences such as this, where the contrast range is so wide, show the OLED65E8 at its most 'HDR' — and where it scores its biggest points over Samsung's (less expensive) 65in Q9FN model. It's not the only advantage this LG has over its arch rival, however. Viewing angle here is far superior. Images survive off-axis viewing without losing colour or contrast, while the Q9FN loses colour saturation, and exhibits backlight blooming, from as little as 25 degrees.

The Samsung, though, has its own advantages. Its extra peak brightness can deliver a wider expression of the full range of HDR material, and it retains colour saturations better in the very brightest parts of a picture. 4K images appear a little sharper across the whole picture too







- although, strangely, the LG's 4K pictures look slightly more detailed over close-up content. And finally, the LG has to dim down with uniformly bright HDR pictures while the Samsung generally does not.

As for those looking to partner this set with a gaming console, LG has delivered a much brighter HDR Game mode than it's ever managed before, and cooked up a sub-20ms input lag time.

Dolby Vision playback is on the menu here (LG offers it across its OLED and Super UHD Nano Cell LCD models). Generally, feed the TV a Dolby Vision source and you're rewarded with noticeable improvements in colour accuracy/balance and dynamic range. Samsung's screen rivals (and TVs from Panasonic and Philips) support the HDR10+ format, which works along broadly similar dynamic metadata principles to Dolby Vision, but at the time of writing HDR10+ is only supported by Amazon Video; there are still no HDR10+ 4K Blu-rays.

It should be noted, though, that while the OLED65E8's Dolby Vision pictures usually look even more enticing than its HDR10 (and SDR) images, every now and then Dolby Vision scenes containing a mix of dark and bright content arriving into the TV over HDMI can cause the picture's usually stunning black levels to shift up a little. This is a much more minor issue than it has been on the previous two OLED generations, but hopefully LG can eventually deliver a firmware update that removes it completely.

I ThinQ, therefore I am

LG's Alpha 9 processor doesn't just deliver improved pictures. It also contributes to a much more expansive smart system, adding support for a new ThinQ Al platform to LG's traditional WebOS interface.

ThinQ AI delivers much improved voice recognition and control, accessed via the familiar, curved remote, plus the potential for the TV to monitor and control other electronic devices and appliances in your home. Professional



SPECIFICATIONS

3D: No 4K: Yes. 3,840 x 2,160 HDR: Yes. HDR10; Dolby Vision; HLG; Technicolor HDR TUNER: Yes. Freeview HD; satellite CONNECTIONS: 4 x HDMI inputs; 3 x USB; RF input; satellite input; Ethernet; headphone output; optical digital audio output SOUND (CLAIMED): 60W, 4.2-channel BRIGHTNESS (CLAIMED): N/A CONTRAST RATIO (CLAIMED): N/A DIMENSIONS (OFF STAND): 1,449(w) x 903(h) x 52(d)mm WEIGHT (OFF STAND): 26.6kg

FEATURES: USB/network multimedia playback; Alpha 9 processor; WebOS/ThinQ/Al smart platform; voice control/recognition/search (incl. Google Assistant and Alexa support); HDR Effect; Dynamic Tone Mapping; Quad Step noise reduction; Dolby Atmos decoding; One-Touch Sound Tuning

PARTNER WITH



SAVING PRIVATE RYAN:

Another fan-favourite Spielberg flick gets the back-catalogue 4K treatment, and it's a doozy, marrying detailed, assured 4K HDR imagery with a revamped Dolby Atmos soundmix.

installers should also appreciate the OLED65E8's much more advanced and individually controllable calibration menus and options.

A WebOS user interface is once again employed, LG having first debuted it in 2014. As expected, this continues to impress with its attractive graphics, ease of navigation and customisation of the onscreen interface. It also supports a strong array of video streaming apps: Netflix, Amazon Video, YouTube (all in 4K and HDR iterations), Now TV, and the new Rakuten TV platform that's become the first in Europe to provide both Dolby Vision and Dolby Atmos streams. Catchup apps for UK broadcasters are provided within a Freeview Play container.

E for exciting

The OLED65E8's improved smart features and, especially, outstanding picture quality make it among the most exciting OLED TVs yet for any home cinema fan who loves the spectacle HDR can provide. Its only serious problem, beyond a sonic performance that seems to have regressed rather than moved forward, is its price.

The TV certainly stands up to stiff competition from direct-lit LED models. Samsung's 65Q9FN is an obvious challenger – making a choice between the two is tricky, as each offers its own distinct advantages, as discussed earlier.

More difficult to ignore is LG's own OLED65C8 model, which experience suggests will offer essentially the same picture quality, while retailing for a good chunk less courtesy of a different design/audio implementation.

If you're a member of the money's-no-object crowd, though, partnering LG's superb new OLED picture performance with the OLED65E8's smarter aesthetic and slightly more beefed-up sonics is probably a no-brainer

HCC VERDICT



LG OLED65E8

 \rightarrow £5,000 \rightarrow www.lg.com/uk

WESAY: Excellent new processing addresses many of the minor niggles of previous OLED TVs, and boosts HDR performance. A slimmed-down design doesn't benefit sound quality, though.

- 3. LG's OLED retains its colour and contrast when viewed off-axis
- 4. Dynamic Tone Mapping processing aims to improve HDR10 playback
- 5. There's also a 55in model in the E8 series



David Vivian enjoys full-fat home cinema goodness from an elegant 5.1 package

Taking value to the limit

As if guided by some mystic force, Q Acoustics, founded a mere decade ago, seems incapable of putting a foot wrong. Be it in its M series soundbars and soundbases or traditional speakers, when it comes to close but no cigar – heroically missing the mark by just a hair – the company is utterly useless.

AV INFO

PRODUCT: Floorstanding 5.1 speaker system

POSITION:

Ranked below Q Acoustics' Concept models, above 7000i and 2000i ranges

PEERS:

Acoustic Energy 100 Series 5.1; Polk Signature 5.1

7. Q Acoustics' 3000i range replaces 2015's 3000 Series

An established wunderkind in the budget sector, Q Acoustics rocked the high-end to its core when, out of the blue, it produced the £4,000-per-pair Concept 500, a floorstander of such quality and sonic reach it effortlessly put the bite on towers twice the price and more. Therefore, when Q Acoustics announces the successor to its hugely popular and affordable 3000 Series lineup — which includes everything you need for a neat and stylish 5.1 setup — expectations are sky high.

Not one for sweeping change, the 'i' beloved of audio and car makers alike is brought in to denote the evolved series which, at first glance, bears a striking resemblance to the outgoing fare.

Top of the range is the 3050i floorstander, priced at £650 per pair. There are two standmount models – 3010i (£200) and 3020i (£250) – while a new 3090Ci centre speaker (£170) and slender 3060S active subwoofer (£330) complete the family. Of course, you could pick 'n' mix your 5.1 system from this lot, but what we have here is the more expensive (£1,350) of the two money-saving packages Q Acoustic offers, with the 3050i floorstander rather than the 3020i standmount up front partnering the 3010i rears, 3090Ci centre and 3060S sub. Opt for the 3020i-based package and the price drops to an even more enticing £895.

Trickle-down tech

Claims for the new range are simple: better sound, smarter looks. Although nudging the bar a little higher isn't so simple, you might suppose, when your existing product is already so highly regarded. Naturally, having achieved so much with its Concept 500 flagship, there's trickledown involved, most critically something called P2P. This stands for Point to Point bracing which, according to Q Acoustics, supplies internal support 'in areas of the cabinet that need stiffening', including an extra precision-cut damping panel. Cue 'more focused, accurate and low-distortion fidelity', we're told.

Also a direct lift from the Concept 500 is Heimholtz Pressure Equaliser (HPE) tubing, which is said to limit internal standing waves and reduce resonance by converting pressure to velocity, thus reducing the overall pressure gradient within the speaker enclosure. This trickle-down tech has been applied to the 3050i tower speaker, as Q Acoustics contends this acoustic engineering is perfect for taller loudspeakers that tend to resonate at a single favoured frequency.

Both standmount models retain their distinctive curvy corners but have deeper, rear-ported enclosures than their predecessors, increasing their internal volume by 25 per cent for an improved low-frequency performance. The crossover used in the 3010 has been revised to take account of the 3010i's larger cabinet volume, enhancing both sensitivity and bass extension.

'When Q Acoustics launches the successor to its hugely popular 3000 Series, expectations are sky high'

The standmounts' 4in midbass drivers use a cone, precision-formed from impregnated and coated paper, and mated with a newly developed rubber surround. Q Acoustics says the coated paper cone provides the optimum balance between stiffness and self-damping, which means it can accelerate without flexing and stop very accurately without unwanted resonances.

A new lin microfibre soft dome tweeter is decoupled from the baffle via a suspension system, helping to isolate it from vibrations from the midbass driver, and has a wide surround for wider dispersion.

The enclosures' four tiny rubber feet make for easy bookshelf placement. Less so some speaker stands, but then there's always Q Acoustics' own 3000FSi stands

(£150 per pair) or, if space is tight, the 3000WB wall brackets (£20 each).

The front of house 3050i is an elegant tower with twin, rear-firing bass reflex ports and twin 6.5in midbass drivers sited above and below the 1in soft dome tweeter in a D'Appolito arrangement. As well as HPE tubing and P2P bracing, the usual terminal panel cut-outs have been removed to improve structural integrity. Rear outrigger plinths, plus spikes, are provide for wobble-proof levels of stability.

Designed to be the same width as most amplifiers and AV receivers, the 3090Ci centre speaker doubles up on the 3010i's 4in midbass driver to flank the same lin microfibre tweeter in the middle. Like the 3010i, it has pre-fitted rubber feet or can be wall-mounted on a dedicated bracket.

'This system is adept at conjuring scale and crisply formed minutiae at the same time in the same space'

Rounding off the ensemble is the 3060S active, sealed subwoofer. As with Q Acoustics' other subwoofers, this is a slimline design that looks a little bit like a suitcase – only one made from wood. The sub's 8in bass driver is front- or side-facing, depending on how you position it. An onboard 150W Class D amplifier provides the grunt.

Adding to its discreet design is some nifty cable integration, which sees inputs (plus phase and auto on/off switch) hidden behind a removable side panel. Crossover and level controls are always accessible, however.

The previous iteration of this sub, the twin-6.5in driver 3070S, was liked for its svelte size, speed, agility and musicality but lacked a little visceral oomph during moments of SFX overkill. Be interesting to see how this one fares.

But before we sit down with some high-potency, ballistic-bandwidth home cinema releases, a word about how this 5.1 collection looks and feels. For the money? Fabulous.

There are four finishes available: Graphite Grey, Carbon Black, Arctic White or, as here, a very classy English Walnut with a satisfying tactile depth to the grain. The neatly integrated binding posts and natty chrome driver trims look distinctly up-market, too, and unlike previous





generations, there's no price premium attached to the glossy black/white finishes.

Natural balance

Sometimes, a speaker system sounds 'right' in the sense that it simply doesn't get in the way of the source material. There's no conspicuous evidence of manipulation or editorialising; nothing overtly pumped up, pared back or otherwise tailored to construct a particular sonic profile. Q Acoustics' 3050i Cinema Pack is just such a system. Detail, focus and intelligibility are all fine but, more than that, it's the way these six boxes sound properly integrated with a warm, natural balance that impresses most.

It's an approach that's well-suited to material that takes as much care over its inner intricacies as its outer limits. The Blu-ray of *Spider-Man: Homecoming* is a good, synergistic choice in this respect. Soundscapes bristle with subtle ambient cues that perfectly define Peter Parker's varied environs, whether it's a street-level rumble or skyscraper swoop-a-thon. The 3050i system is especially adept at conjuring scale and crisply formed minutiae at the same time in the same space, suggesting not just exceptional transparency, but finely graded dynamic expression.



These talents again prove their worth with the strange (in a good way) *Ghost in the Shell* (Blu-ray) which, rather like *Blade Runner 2049*, leans heavily on the soundtrack's ability to weave a futuristic urban soundscape across three dimensions, populated with giant holographic adverts and dripping with atmospheric hustle-bustle, that meshes tellingly with the visuals. The film's richly layered music score is just as deftly handled and, as far as the low-end effects on this outing go, the slimmer-of-the-week subwoofer copes admirably, delivering meaty weight and decent extension.

A sterner challenge is posed by the Blu-ray of Fast & Furious 8 with its savage steering effects, gnashing valvetrains, throbbing exhausts and pounding music tracks. Here, the revved-up LFE channel gives the 3060S subwoofer just a little more than it can comfortably handle. But, far from falling apart, it gives in gracefully, compressing just a little rather than rattling on the end stops.

'Why don't you come to your senses?'

Feed the speakers Diana Krall singing her exquisite cover of The Eagles' *Desperado* (*Wallflower*, CD) and, on the more sympathetic of my Denon's AVR's surround settings, this system's an unqualified winner. Dusky vocal, understated ivory tinkling and satiny massed strings melt into an achingly beautiful whole that's mesmerising to listen to. Undoubtedly, the Krall track plays to the 3050i system's strengths but, like all the best speakers, it's the Q Acoustics' adaptability that convinces. Energetic with rock, expansive with big orchestras, intimate and tactile with simpler acoustic material (musicians other than Ed Sheeran are available), it frequently exhibits the canny ability to lay bare the spirit of whatever is played.

So let's get a bit cosmic. In know it's a cliché, but with Pink Floyd's *The Dark Side of The Moon* the music has a shimmering, scalp-tingling presence nailing that narrowest of lines that exists between resolving detail while fully encompassing the momentum of the whole. The sound is revealing without being pernickety, harmonically rich without lapsing into lushness and rhythmically coherent without rimshots bouncing off the walls. It's an extremely

SPECIFICATIONS

3050i

DRIVE UNITS: 1 x lin microfibre dome tweeter; 2 x 6.5in paper cone midbass drivers ENCLOSURE: Twin rear-ported FREQUENCY RESPONSE (CLAIMED): 44Hz-30kHz SENSITIVITY (CLAIMED): 91dB POWER HANDLING (CLAIMED): 50W-165W DIMENSIONS: 310(w) x 1,020(h) x 310(d)mm WEIGHT: 17.8kg

3090Ci

DRIVE UNITS: 1 x 1in microfibre dome tweeter; 2 x 4in paper cone midbass drivers **ENCLOSURE:** Twin rear-ported **FREQUENCY RESPONSE (CLAIMED):** 75Hz-30kHz **SENSITIVITY (CLAIMED):** 89dB **POWER HANDLING:** 30W-100W **DIMENSIONS:** 430(w) x 152(h) x 216(d)mm **WEIGHT:** 6kg

3010i

DRIVE UNITS: 1 x 1in microfibre dome tweeter; 1 x 4in paper cone midbass driver ENCLOSURE: Rear-ported FREQUENCY RESPONSE (CLAIMED): 65Hz-30kHz SENSITIVITY (CLAIMED): 86dB POWER HANDLING (CLAIMED): 50W-125W DIMENSIONS: 150(w) x 253(h) x 252(d) mm WEIGHT: 4.1kg

3060S (subwoofer)

DRIVE UNITS: 1 x 8in paper cone bass driver **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 35Hz-250Hz **ONBOARD POWER (CLAIMED):** 150W Class D amplifier **REMOTE CONTROL:** No **DIMENSIONS:** 480(w) x 300(h) x 150(d) mm **WEIGHT:** 8.5kg **FEATURES:** LFE input; stereo phono input; auto on/off; crossover and level controls; phase switch; supplied with spikes; removable connections cover

PARTNER WITH



SPIDER-MAN: HOMECOMING:

This Sony Pictures Blu-ray release barely puts a foot wrong when it comes to its AV presentation. Audio is DTS-HD MA rather than Dolby Atmos, but it has plenty to test the merits of any speaker package.

likable kind of presentation, devoid of manipulative emphasis, maybe a little dry, but ultimately satisfying.

For a final fling it's back to Blu-ray and the good-but-not-as-good-as-the-original *Guardians of The Galaxy Vol 2*. If the film itself doesn't feel quite as fresh and funny, the audio mix seems about twice as busy and boisterous, and gives this system a serious workout, seemingly engaging all of the boxes all of the time. The potential for muddle and confusion is high but never quite materialises, the overlapping and aggressively steered effects refusing to clash or blur, the heftiest LF delivered gamely and with good speed – if not quite the weight and rolling infra-bass of bigger woofer. It isn't the most exciting performance ever but, at the price, the quality is little short of astonishing.

Masterful update

To sum up, this is a masterful update of an already very talented 5.1 package. It retains the basic balance and natural tonality of the original but in an expanded and more refined performance envelope, with enhanced clarity and insight. On top of which, it looks great, is well built and beautifully finished. And value for money? Off the charts

HCC VERDICT



O Acoustics 3050i Cinema Pack

£1,350 - www.gacoustics.co.uk

WESAY: Q Acoustics hasn't totally transformed its popular 3000 series 5.1 package, but has made it subtly better. Which means it's very good indeed.

- 2. Our pack is finished in English Walnut – grey, white and black are alternatives
- 3. The speakers' revamped terminals are deep enough for 4mm plugs
- 4. For this new sub, Q Acoustics increases amp power and uses a single 8in bass driver



AV INFO

PRODUCT:

Upper mid-range soundbar/subwoofer combi

POSITION:

A step up from the 2.1-channel HW-N450

PEERS: Sonos Playbar; JBL Bar 5.1

- 1. As an alternative to its slim remote, the 'bar can be controlled via a Samsung app
- 2. We photographed the bar upright, but it should be laid flat...

Samsung's Acoustic Beam Technology aims to energise **Richard Stevenson**'s cinematic audio

Beam me up

Soundbars continue to be the home entertainment sound system of choice for most people. Even those with a serious multichannel setup may well have a soundbar in another room to bolster a TV without the fuss of amps and speakers. But not all claim to create a surround sound experience — a feature which tops the spec sheet of Samsung's HW-N650.



This £700 system packs Acoustic Beam Technology (ABT). Developed by Samsung's California-based Audio Lab, the system uses two horizontal pipes with a tweeter firing down the length of each. The pipes are tuned with a series of holes on their upper edge, acting like a flute. As the holes are different sizes, they resonate at different frequencies, and output from adjacent holes combines to give directivity to the sound. Surround sound information is aimed upwards and out towards the sides of the soundbar, reflecting off walls and ceilings to, the brand says, create a surround effect. And, yes, it works. A decent-sized room is preferable for the sound to expand into something resembling an immersive soundstage, but the effect is noticeable even in a smaller space.

Feed me 5.1

Give the HW-N650 a Blu-ray signal and Dolby and DTS formats are decoded into 5.1, with surround channel information fed to the ABT tubes. Atmos and DTS:X formats default to the standard 5.1 core. Stereo sources are upmixed using Samsung's ABT steering algorithm to create





The rest of the N650's specification list befits its fairly premium asking price. Described as offering Panoramic Theatre Sound, this 5.1 design claims a healthy 200W of amplification in the 'bar itself. Its eight drivers each have their own power amp – one each for the ABT tweeters

'The surround effect of Samsung's Acoustic Beam Technology is noticeable even in a small room'

and bi-amped for the mid-range and high-frequency units of the front LCR channels. Build quality is solid, the unit feels weighty for its size and at 110cm wide it's ideal for largescreen TVs.

For device hookup there's a single optical digital audio port, a 3.5mm stereo input, and HDMI in/out with 4K (but not HDR) video passthrough. The HDMI output supports ARC. Bluetooth and USB are also provided.

If those connections are not enough for TV use, and you own a recent Samsung TV, you can connect wirelessly, eliminating TV-to-soundbar cables altogether. And the HW-N650 has another trick up its tubes if connected to a current Samsung TV. Detecting metadata on Blu-ray film and gaming titles, the N650 will automatically switch to game mode or movie mode as the disc boots up. This could be ideal for those using their games console also as a BD player.

Control is by Samsung's sleek little remote, Samsung's Audio Remote app (via Bluetooth), or manual buttons on the side when the remote has gone AWOL. A three-character LED display in blue shines through the metal grille to the right side of the bar. This stays illuminated for a few seconds after any key-press and then switches off so as not to distract viewing. Wall-mount brackets are also supplied.

The compact, wireless-only sub has a whole lot less to shout about. It is an innocuous box with a 6.5in bass driver and its own 160W power amp. The rear panel is clean save for the mains socket, wireless link button and large, flared reflex port.

Seamless setup

With the benefit of a Samsung Q7 TV, the HW-N650 does indeed offer a seamless setup and operational experience. The bar's remote is idiot-proof and, connected to a PS4, it switched between gaming and standard EQ modes

automatically. The Audio Remote app looks slick but was far less impressive in operation; while it functioned okay once connected, it disconnected itself often and would declare 'not supported file format' when playing FLAC music, despite actually playing the track anyway.

Yet the HW-N650 more than makes up for this niggle with a wholesale sonic improvement over any standard TV performance. As we've come to expect from Samsung's Audio Lab products, its solid sound is blessed with impressive fidelity. There is none of the 'cuppy' character of low-cost models, and it really sings with stereo music. The subwoofer rolls along with the show as much as it can, but its sonics are a bit one-note and boomy compared to the more sophisticated soundbar.

The litmus test is surround sound material, where the ABT system comes into its own. Using the cleanly crafted and precision-engineered soundscape of *Paddington 2* (Ultra HD Blu-ray), the N650 doesn't disappoint in impact or enveloping surround. The balance is neutral and punchy, the dialogue articulate, and the sub adds hammer-weight to action albeit with a rubber mallet rather than a sledge. Close your eyes and the effects-laden barbershop scene is delivered with a wide soundstage and a feeling that the soundscape is emerging from a whole lot more enclosures than you're using.

It's not a full 5.1 system experience, though. There isn't the defined and accurately positioned effects behind and

SPECIFICATIONS

DRIVE UNITS: 5 x tweeters; 3 x midbass units **ONBOARD POWER (CLAIMED):** 6 x 30W + 2 x 10W **CONNECTIONS:** HDMI input; HDMI output; USB; optical digital audio input; 3.5mm jack **DOLBY TRUEHD/DTS-HD MA:** No – downmixed **SEPARATE SUBWOOFER:** Yes. 6.5in woofer; 160W amplifier **REMOTE CONTROL:** Yes **DIMENSIONS:** 1,100(w) x 59(h) x 100(d)mm **WEIGHT:** 3.6kg

FEATURES: Acoustic Beam Technology; wireless connection from Samsung TVs; wireless subwoofer; game mode; Bluetooth; wall bracket supplied; HDCP 2.2; Audio Return Channel (ARC); WAV, MP3, WMA, OGG, FLAC and AAC file support; 42Hz-20kHz claimed frequency response; Samsung Audio Remote app

PARTNER WITH



SAMSUNG SWA-8500S: The HW-N650 can be expanded into a physical 5.1 system with Samsung's rear speaker accessories pack. This features two 13cm-high cabinets that link to a mains-powered receiver module. Price is £170.

to the sides one would expect from a discrete setup. The N650 does pump up the ambient information to create an immersive soundfield, though.

Like many reflective surround sound implementations, the performance here will be very dependent on room positioning (for instance, when a door was left open on one side of my room, it had a clear negative impact on the Samsung's presentation), but it definitely works. My only question would be how much better (or not) is the surround sound effect from the complex ABT system, compared to a more traditional, angled driver array?

With a re-run of *Thor: Ragnarok* (Ultra HD Blu-ray) in full flight, it's a bit of a moot point, though. The N650 is highly entertaining. It is at its most immersive through calmer scenes; the ambience of the great chamber where Thor is hanging by chains in the opening sequences is well defined. When the going gets tough, such as the gladiator fight against Hulk, it does find itself a little out of its depth as effects tends to blur together. Experimenting with the tone settings, I suspect the subwoofer is the weak link here as its gets swamped by LFE-heavy scenes. The large rear port makes the cabinet quite excitable and, ironically, I found it sounded tightest with its port pointing into the room and the driver facing a wall. That's not a great look though...

Ambience chasing

Samsung's Acoustic Beam Technology can be effective at creating surround sound ambience in the right room, and if you really can't install rear speakers it is a nice addition. Yet the HW-N650's real sonic charms are perhaps its solid, nuanced front-of-house sound and articulate dialogue – not to mention ease of operation. The HW-N650 is no budget soundbar solution but its performance prowess and slick simplicity make it a worthy contender at the price \blacksquare

HCC VERDICT



Samsung HW-N650

→ £700 → www.samsung.co.uk

WESAY: Samsung's ABT gives a good impression of surround sound but the N650's real strengths lie in its solid sonic presence and excellent ease of use. LFE is a bit unrefined.

3. The HW-N650 detects metadata to automatically switch between movie and game presets

The Worlds Finest Filmmakers use M&K to Make their Movies Does Your Cinema Deserve Anything Less?



"Best Home Cinema Speakers 2017"

M&K Sound S300 THX Series

"This system is superb and is composed of The Best Home Cinema Speakers of the year."

Phil Hinton, avforums

- * Warner Bros
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Optoma hasn't just sliced the price of 4K projection, it's made 3D cool again, argues **Steve May**

Return to the third dimension

It's been quite some time since I leapt from a cliff and soared through the clouds on the back of a Toruk. But it's every bit as exhilarating today as it was when I first took the plunge in 2009. Back then, James Cameron's *Avatar* was a 3D cinema sensation, but that dimensional euphoria has been hard to recreate of late. These days stereoscopic hardware is even rarer than Unobtanium.

Still, things are looking up. Optoma's low-cost 4K beamer, the UHD51, is part of a new generation to offer 3D compatibility, albeit in 1080p. And it turns out this projector is a grand reminder of just how much fun bigscreen 3D can be. My return to Pandora has left me thrilled and dizzy with delight.

Smart and compact

Design wise, the UHD51 should be easy to accommodate. It's smart and compact, and relatively light too, at 5.22kg, so ideal if you want to install it on a shelf or ceiling mount. The cabinet is gloss black, with a silver trim that wraps around the body. The lens, which is slightly offset, has a matching silver surround.

Rear connections comprise two HDMI inputs, both of which are 4K-capable with HDCP 2.2 support. There's also a PC VGA port, audio minijack in/out and optical digital audio output. A USB port can be used to power an HDMI dongle/streamer, should you want to pop one in one of the HDMI inputs. Control options include RJ45, RS-232 and a 12V trigger, the latter useful for integrating a motorised screen.

The UHD51 sports its own, relatively modest, internal 5W sound system. While useful for impromptu sessions, it's neither Hi nor Fi. For movie playback you'll certainly want to turn it off in favour of a dedicated surround system.

It's an easy PJ to get to grips with. Optoma offers a great-looking graphical interface, and there's an internal test pattern generator to ensure sharpness and linearity. Zoom and lens shift (vertical) are managed manually via an adjustment atop the lens.

There's a variety of SDR viewing presets (Cinema, HDR Sim, Game, Reference, Bright and User) but to be honest there's not a huge amount of difference between them, certainly compared to the differences you might see

between presets on a TV display. With Blu-ray/TV content the Cinema mode became my go-to default, and it's actually quite atypical for a Cinema mode, being punchy, with clean, uncoloured whites and excellent colour.

The projector is compatible with HDR10 content. Compliance can be set to Auto or turned off completely. You might want to do the latter if you find an HDR image dims unacceptably. When given an HDR signal, the UHD51 locks to a single HDR display mode. It had no problem accepting a 10-bit 2160p output from a Sky Q set-top box. I used this and a Panasonic DMP-UB900 UHD Blu-ray player for the bulk of the audition.

Eco warrior

The UHD51's lamp brightness has just two settings, Eco and Bright. The former extends the life of the lamp to a claimed 10,000 hours, but more significantly drops the operating noise of the projector down. There is a visual consequence though. Watching animated sequel *Kung Fu Panda 2* (BBC Two HD), the white feathers of Master Crane lose a little of their luminance when you switch to Eco. The picture still has a high level of 'snap', though, and you probably wouldn't notice the difference without an A/B comparison.

This is just as well, because in its Bright mode the UHD51 is actually quite noisy; Optoma quotes 25dB, but it sounds louder. Switch to Eco and fan noise drops to a whisper. Unfortunately, the tone of the spinning DLP colour wheel is distinct and unwavering. It's like a pronounced buzz, which is a bit disappointing. I've no doubt that most cinephiles will mask this with serious audio (although you'll not escape it if you're screening *A Quiet Place*).

The PJ's XPR (eXpanded Pixel Resolution) 0.47in DMD device is partnered with a six-segment RGBRGB colour wheel that covers 100 per cent of the REC.709 colour

AV INFO

Lamp-based 4K HDR DLP projector

Middle of Optoma's growing 4K stable

PEERS: BenQ W1700; Acer V7850; Vivitek HK2288

7. The UHD51 supports 3D playback, but glasses aren't bundled

2. Optoma's latest remote control cuts down on buttonry



56 REVIEWS



space. This unit doesn't therefore support wide colour as used on UHD Blu-rays, instead downconverting to the standard currently embraced by TV and vanilla Blu-ray.

And this isn't a major issue. The palette of the aforementioned *Kung Fu Panda* movie, within a REC.709 container, is ferociously lush. A journey by our rotund hero into a perilous pagoda is bathed in all shades of red, but the image is never noisy.

Colour production can be tweaked via Optoma's colour management suite. Brilliant Color processing is adjustable between 1 and 10; D65 is the default colour temperature, but you can scale up or down from this point. The colour

'Optoma's UHD51 shakes up the home cinema projection market. 4K UHD has bumped Full HD to the cheap seats'

gamut itself is variable between Native, HDTV, Presentation, Cinema and Game. Native is the best bet. You can also tweak RGB gain and bias, although this shouldn't be considered a user setting.

Clearly DLP

DLP's trademark clarity is evident in both HD and Ultra HD sources. Its pin-sharp accuracy is superb. Refreshingly, I didn't experience any rainbow flicker, DLP's old nemesis, either. I found the picture smooth and coherent, and largely immune from contrast-induced artefacts.

There's been some debate about the validity of DLP's 4K presentation given the flippy nature of the tech, yet the

projector actually does an excellent job presenting ultra-fine detail from a UHD 2160/23.976 test pattern. All graticules exhibit detail, although there is a flicker or 'fidget' on the bars, presumably a cumulative result of the mirror switching tech.

For raw detail and naturalistic texture, the gritty North London drama *Save Me* (Sky Atlantic 4K) has much to offer. The forlorn inner-city estate exhibits a wealth of detail, and there's a preponderance of emotive close-ups to convey the drama. The imagery is quite striking.

Black level performance is good enough. It's probably unreasonable to expect a low-cost projector like this to be able to differentiate the same level of shadow detail as an OLED screen, but it certainly has no problem differentiating between 0 and 10 per cent black on a greyscale. Use of the supplied Dynamic Black tool is largely down to taste. I preferred it Off on this model, however some might like the denser blacks it produces.

The UHD51's HDR handling is rather good. Playing *Transformers: Revenge of the Fallen* (Ultra HD Blu-ray), wherein Shia LaBeouf's car is airjacked and then rescued by Autobots (Chapter 9), rewards with a nice sense of dynamism. This PJ doesn't mute the image in an attempt to fake highlights; sparks and explosions generate genuine peaks. The Optimus Prime forest face-off also provides a stunning example of the blistering clarity the UHD51 is capable of. When Prime falls and his victor's eyes glow deep red, it's difficult not to splutter with AV satisfaction.

It performs well with SDR too. As Spidey foils the faux-Avengers bank robbery in *Spider-Man: Homecoming* (Sky Cinema UHD), alien weaponry crackles with luscious luminosity, and later, when Peter scales the Washington





Monument, the detail in the brickwork and his suit is crisp and obvious. VFX seams are nowhere to be seen.

Image smoothing is offered in the form of PureMotion processing. This is actually quite benign in operation (which is a good thing), and irons out horizontal panning judder. I'd recommend keeping PureMotion Low for movies and TV content, but experimenting with High for sports.

And then there's the surprise star turn. Optoma's UHD51 will project 3D in 1080p with a 144Hz refresh rate — and it looks glorious. 3D images exhibit extreme depth with minimal crosstalk. Unsurprisingly, there are no 3D glasses supplied, so you'll need to invest in a pair of Optoma's ZD302 DLPLink spex. But it's worth the expense.



SPECIFICATIONS

3D: Yes. Active 3D **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10 **CONNECTIONS:** 2 x HDMI inputs; PC VGA input; 3.5mm audio input; 3.5mm audio output; optical digital audio output; USB (powered); 12V trigger; RS-232; Ethernet **BRIGHTNESS (CLAIMED):** 2,400 Lumens **CONTRAST RATIO (CLAIMED):** 500,000:1 **ZOOM:** 1.3x **DIMENSIONS:** 392(w) x 281(h) x 118(d)mm **WEIGHT:** 5.22kg

FEATURES: XPR single-chip DLP design; 5W built-in audio; 4,000-hour claimed lamp life (Bright mode), 10,000 hours (Eco mode); 25dB fan noise; 3D playback at 1080p24; throw ratio of 1.21:1-1.59:1; vertical lens shift; manual zoom; colour management system; ISF modes; backlit remote control; internal test pattern; PureMotion frame interpolation

PARTNER WITH



OPTOMA ZD302: Available for around £60 per pair, Optoma's DLPLink 3D glasses come in an eye-catching red design and claim a 40-hour battery life, rechargeable (in around three hours) via a USB connection tucked into the top of the frame.

The projector does an excellent job boosting brightness to compensate for these shuttering specs, thereby maintaining contrast and colour vibrancy. The menu for Disney's *Tangled*, which features a plethora of airborne lanterns, looks invitingly deep, with each lantern tightly defined. *Tangled*'s 'Meet Jack Ryder' sequence, in which the scoundrel flees pursuing horse-mounted assailants, enjoys grin-inducing dimensionality.

Note that with 3D content, the projector locks to a 3D display mode. You don't get to choose from any other image preset.

Speaking of Alexa

Brilliantly priced, a rock-solid performer and with just enough setup flexibility not to make installation a chore, Optoma's UHD51 certainly shakes up the home cinema projection market. 4K UHD has unapologetically relegated Full HD to the cheap seats, and offers a level of performance that would frankly have been unthinkable for the price, even a few months ago. It's well appointed, capable of extreme clarity and even makes 3D fun again. Perhaps it's finally time for HD home cinephiles to upgrade?

Or maybe it isn't. Oddly, Optoma has already announced an sequel of sorts. The UHD51A, pencilled in for a hasty Autumn launch, adds Alexa control functionality to the package. A SmartProjection Smart Home skill will allow owners to power the projector on and off and select input sources without having to lift a finger.

It seems this current iteration of the UHD51 can't be firmware upgraded to support Alexa, because that involves additional hardware. So is voice control worth waiting and paying a (probable) premium for? We don't yet know. You could always ask Alexa... ■

HCC VERDICT



Optoma UHD51

→£1,500 → www.optoma.co.uk

WESAY: Optoma doesn't cut corners with this entry-level UHD hero. Images are sharp, colour rich and dynamic, and there's the bonus of fine-looking 3D.

- 3. Connections include an optical output for sending audio to a soundbar/soundbase
- 4. Zoom and lens shift controls are mounted above the lens



Contrasting fortunes

Sony's XF8505 4K HDR TV has the price tag to appeal to buyers seeking to step up from the mass market. But **John Archer** isn't convinced it has the performance power to match

AT £1,400, THE 55in KD-55XF8505 is Sony's first real mainstream TV of 2018. So my first job needs to be tracking down how its specifications differ from those of the (excellent) step-up XF9005 series reviewed in 55in guise in *HCC* #285.

Probably the most important difference is that the 55XF8505 ditches the XF9005's direct LED lighting with local dimming, in favour of an edge-based lighting system with 'whole frame' dimming. This means it only adjusts the brightness of the entire lighting system in response to changes in picture content, removing the ability for more subtle illumination tricks.

Also, unlike the XF9005 models, this TV uses an IPS-type LCD panel. Such panels support wider effective viewing angles than rival VA ones, but have been known to struggle to deliver a strong contrast.

Not taken to the Extreme

Behind the panel there are other differences. The KD-55XF8505 uses Sony's 'vanilla' X1 processing system, which has around 40 per cent less computational grunt than the X1 Extreme chipset in Sony's step-up models, and lacks a number of the Extreme's features. For

example, there's no dual-database system for separate noise reduction and detail addition procedures when upscaling sub-4K sources. There's also no support for the Dolby Vision HDR format delivered by X1 Extreme sets, and no Precision Colour Mapping for on-the-fly colour optimisation.

The TV's smart features are provided by Android TV. Regular readers will know that I'm not this system's biggest fan. It supports plenty of apps, including 4K HDR versions of YouTube, Netflix and Amazon Video, and Sony has also provided YouView to give you enhanced access to the catchup TV services of the UK's main terrestrial broadcasters (Freeview Play and Android TV are not currently compatible, I'm told). Google-powered voice search/control, plus interoperability with Amazon Alexa and Google Home hardware, offers an extra layer of funky usability.

Android TV's layout, though, remains inelegant and short of customisation options. Running it also makes the TV's whole operating system painfully buggy and sluggish.

The 55XF8505's connections include four 4K-capable HDMIs (although only two of these support 4K/60p 4:4:4) and three USB ports, plus wireless and wired network

AV INFO

PRODUCT: 4K HDR TV v

4K HDR TV with edge LED lighting and X1 processing

Around the middle of Sony's 2018 4K TV range

PEERS: Sony KD-55XF9005; Samsung UE55MU8000 options to support Android TV and access media you have stored on networked devices.

Dark destroyer

It takes only a few moments watching the recent blockbuster Stephen King adaptation *It* on Ultra HD Blu-ray to discover that Sony's 55XF8505 is a flawed performer.

Try watching any of *It*'s darker scenes in 4K HDR, such as Patrick Hockstetter's ill-fated search through the sewers for Ben Hanscom, and pretty much all you see is the thick grey mist that hangs over any part of the image that's supposed to look black.

As well as instantly making all dark scenes appear unconvincing and lacking in dynamism, this depressing greyness suppresses lots of shadow detail.

None of the 55XF8505's settings really address its black level limitations. Reducing the brightness or backlight settings leaves the same fundamental greyness essentially unchanged. Switching between the Standard and Cinema picture presets does little to help, either; the greyness just shifts from having a blue tone to having a red one.

Setting Active Contrast to medium or high does, to be fair, improve things a bit. But only in the sense that it takes dark scenes from being nearly unwatchable to 'at least you can see what's happening.'

Having no real black foundation to play against also affects the 55XF8505's colours during dark scenes, reducing their pop and punch. During the entire sequence where the children fight Pennywise in his underground lair, for instance, there's a muted, bleached look to many of the children's skin tones.

The only thing that at least obscures some of this set's black level weaknesses is watching in a bright room. But I know plenty of HCC readers like to dim the lights when watching movies at home. And in such a situation the 55XF8505 fails to impress.

Making the TV's black level limitations all the more painful is the fact that in other ways its pictures look very tidy. Motion is handled superbly by Sony's Motionflow system, for instance, enabling the camera to track It's sinister balloons, or Pennywise's sinister movements, without generating blurring, flickering or significant digital processing artefacts.

Native 4K pictures are crisp and detailed, and bright HDR scenes such as It's deliberately hyper-rich sunny exteriors enjoy more punch and colour than you commonly find on mid-range LCD TVs. In fact, Sony's processing and light management is good enough to make bright HDR shots look lighter than the 570 nits of peak brightness I measured from a 10 per cent white HDR window (in Standard picture mode; this drops to 505 nits with the Cinema presets).

HDR highlights look at least a little punchy, while the average HDR brightness floor sits markedly higher than it does with standard dynamic range footage. You never get the sort of full-blooded HDR impact you get from Sony's XF9005 series, or other more premium LCD TVs.

SPECIFICATIONS

3D: No 4K: Yes. 3,840 x 2,160 HDR: Yes. HDR10; HLG TUNER: Yes. Freeview HD; satellite HD CONNECTIONS: 4 x HDMIs (all HDCP 2.2); 3 x USB ports; RF input; satellite input; Ethernet port; headphone port; digital audio output SOUND (CLAIMED): N/A CONTRAST RATIO (CLAIMED): N/A DIMENSIONS (OFF STAND): 1,231(w) x 713(h) x 52(d) mm WEIGHT (OFF STAND): 19.1kg

FEATURES: Built-in Wi-Fi; USB multimedia playback; network multimedia playback; Sony X1 processor; Android TV smart platform; YouView support; Chromecast Built-in; IPS panel; Motionflow XR 800Hz; ClearAudio+ processing; 4K X-Reality PRO upscaling; Google Home and Amazon Alexa support

PARTNER WITH



GOOGLE HOME MINI: Pairing the Sony TV with a Google speaker lets you perform voice control without having to lift a remote. This neatly styled Mini model won't offer the last word in sound quality from its onboard speaker, but is priced at a tempting £40.

Also noteworthy is how well the 55XF8505 delivers standard dynamic range and HD footage. All HD content is converted to 4K with exceptional deftness, and while the TV's brightness isn't sufficient to deliver a knock-out HDR picture, it's more than enough to deliver an impressively light and nuanced SDR image. The set's black level problems are less pronounced with SDR too – although they certainly don't disappear.

And the TV's sound is comfortably better than expected. An open and detailed mid-range lets it go loud before it starts to sound harsh, and dialogue remains convincing even under pressure from *It*'s alarming 'jump' sound effects and score.

Explosive soundtrack moments pack just enough bass to have real impact, too, and – best of all – the soundstage spreads far beyond the screen's left and right edges without becoming dislocated or thin.

Bright pupil

The 55XF8505 can, at times, deliver very attractive pictures to go with its above-par sonics, so it's a shame

that these 'good times' occur exclusively with bright content. Whenever a dark sequence comes along — as tends to happen with just about any movie, never mind a horror title like It — the combination of this TV's IPS panel and edge LED engine fall short of what you will expect. In that regard, Sony's mid-ranger is something of a disappointment



HCC VERDICT

Sony KD-55XF8505

→£1,400 → www.sony.co.uk

WESAY: Although the 55XF8505 sounds pretty good and delivers crisp, detailed pictures with bright scenes, it obviously struggles to handle dark sequences.

- 1. Integrated YouView provides access to iPlayer, ITV Hub, All4 and My 5
- 2. The TV uses edge LED illumination with whole frame dimming

A star is born

Looking to boost your TV performance, your network audio and your hi-fi with a single box? Ed Selley looks at a mighty one-stop-shop from Naim



GIVEN THE LEVEL of performance that it offers, you might have thought that Naim would have been content to stop with the hugely capable Uniti Atom we looked at in HCC #278. Yet what you see here is the next model up, the Uniti Star.

Crucially, from an AV perspective, the HDMI input is still present – and indeed, no longer a cost option - allowing for an ARC (Audio Return Channel) signal to be sent to the Naim for decoding. The same impressively slick and capable UPnP streaming module is fitted too, allowing you to access files over network, from Tidal and Spotify, or via Chromecast.

In addition to the HDMI connection, there are five other digital inputs and two analogue connections (one on Naim's trademark DIN-style plug), and a pre-out for connection of a power amp or subwoofer.

These features aren't significantly in advance of the specification of the £2,000

Uniti Atom of course,

so why does the

a hefty £3,500?

on Naim's usual

showing with

Uniti Star retail for

First up, there

is more power at your

disposal. The claimed

figure is 2 x 70W (into

8 ohms) which, based

amplifiers, should be

loudspeaker duo you

enough to drive any

AV INFO

Premium all-in-one stereo amp/ streamer/CD player

Middle member of Naim's Uniti family

Moon Neo ACE; Naim Uniti Atom

differences are on the other 'side' of the cabinet. The Uniti Star can play CDs directly but, more unusually, it can also rip them to FLAC or WAV and store them either on an external hard drive or SD card. This ripped material can then be rendered to other streaming devices on the same network, which makes for a useful potential saving on supporting network hardware.

might realistically want to employ. The other

All this functionality is wrapped in the same excellent casework as the rest of the Uniti series. The full-colour front display is gorgeous and the distinctive (and perfectly weighted) volume control on the top plate oozes class. Naim's well designed app and very clever device-specific remote control makes using the player/amp utterly hassle free. With its wider, dual-section chassis, however, the Uniti Star is perhaps less elegant than its more compact baby brother.

Control and composure

Connected to a pair of Dynaudio Special Forty standmount speakers, the extra horsepower of the Uniti Star comes into its own when things get busy onscreen. The aural whirlwind of the church fight sequence in Kingsman: The Secret Service (Blu-ray) is handled with a control and composure that allows you to track events without strain.

The effect is also impressively immersive for a stereo presentation. In the past I've found Naim equipment has sometimes sounded a little narrow and focused, but the soundstage

SPECIFICATIONS

AMPLIFICATION (CLAIMED): 2 x 70W CONNECTIONS: HDMI ARC input; 2 x optical digital audio inputs; 2 x coaxial digital audio inputs; BNC digital audio input; phono stereo analogue input; DIN analogue input; 2 x USB-A ports; headphone output; stereo pre-out; Ethernet; SD card INTEGRATED SERVICES: Tidal; Spotify; internet radio via vTuner DIMENSIONS: 432(w) x 95(h) x 265(d)mm **WEIGHT:** 12kg

FEATURES: Android/iOS app; AirPlay; Bluetooth; Chromecast; CD player/ripper; UPnP server and renderer; hi-res file support to 32-bit/384kHz

here appears opened out without smearing the placement of effects. And the Uniti Star's ability to dig out detail from film soundtracks without over-emphasising them or losing their context is something that a few dedicated AV receivers would benefit from learning.

There's a lightness of touch that is also notable. The Season 2 opening of Westworld (Sky Atlantic) has moments of considerable delicacy to it; the Uniti Star does a fine job of capturing the lovely interplay of the score and the vast array of sound effects of the Delos corporate world. Nudging down the volume doesn't massively impinge on the depth and scale on offer, either.

Turn your TV off and switch to music and the Naim is simply outstanding. It powers through a Tidal stream of *People Give In* by The Manic Street Preachers in outstanding fashion. The sense of timing and immediacy that the brand is known for is here in spades, and this is the manner by which the Uniti Star engages as much on an emotional level as it does a technological one.

Stellar performer

The varied feature set places this one-box system in a very small product category, but it's not simply a convenient means of obtaining waves of functionality. The way it delivers on its promise is right at the top of the bang-for-your buck scale. Yes, with some careful shopping, I could probably assemble a selection of components that would do the same things for £3,500, but the result would be rather less pleasant to look at, nowhere near as slick to use and - most importantly – probably wouldn't sound any better. The Uniti Star might carry a premium price tag but the performance on offer is absolutely stellar ■

HCC VERDICT



Naim Uniti Star

→£3,500 → www.naimaudio.com

WESAY: It's not cheap and you'll need to add speakers, but the blend of premium design, performance and functionality here is superb.



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Game on for UHD

Smart-looking, bargain-priced and, erm, FIFA-branded, this 4K HDR set from Hisense confounds expectations, says **Steve May**



HISENSE KICKS OFF its 2018 TV season with this footy-themed 55in flatscreen. Not that it's dressed for the lower-league terraces – the U7A has a high level of finish, with an appealing trim bezel around its wafer-thin (for an LCD TV) panel.

Once you get past the FIFA World Cup boot screen (no, seriously, that's what you get), the user interface design is crisp and clean, making a virtue of simplicity. The home screen overlays live footage with a central tile bar, giving access to Freeview Play, Apps, Inputs, Media and Settings. Of the offered apps, Netflix, Amazon Prime Video and YouTube all support 4K streaming. Both Netflix and Amazon Prime handle HDR, too.

Picture quality varies considerably depending on the image preset chosen. When

AV INFO

PRODUCT:
55in Ultra HD/HDR
LED TV

POSITION:
Mid-range soccercentric flatscreen

PEERS:
Sony KD55XF8096;
Panasonic
TX-FX740B

viewing Standard
Dynamic Range
content, the available
modes are Standard,
Cinema Day, Cinema
Night, Dynamic and
Sports. The Cinema
modes aren't
particularly flattering,
as skin tones take on
a greyish hue and
the image flattens.
Standard offers
a better, brighter

balance, although at times I felt Dynamic delivered the most satisfying image. With HDR content, the settings default to HDR Dynamic, HDR Day and HDR Night.

The U7A delivers a full-range 4K image, with no compromise on detail. And with 4K Blu-ray and OTT services, the HDR Dynamic mode gives a further subjective boost to pixel finery.

That said, this set isn't a bright HDR performer. I measured peak luminance at 280 nits in HDR Dynamic mode, using a 5 per cent window. However, while the set's HDR chops may be limited, images still have naturalistic balance. With gamma on 2.2, adaptive backlight on medium, and the Dynamic picture mode selected, you have an impactful display that looks great with both 1080p and native 4K.

Into the void

The TV's ability to cope with near black is ably demonstrated by Ozzy Osbourne. In the rockumentary *Black Sabbath: The End* (Sky Arts, Ultra HD), the singer's stage outfit offers layers of black, while his bedazzled costume jewellery catches the light. This Hisense rocks it all.

The U7A has a powerful suite of motion handling options. Hisense's Ultra Smooth Motion processing is variable between Standard, Smooth, Film, and Clear. Both Clear

SPECIFICATIONS

3D: No **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10; HLG **TUNER:** Yes. Freeview; satellite **CONNECTIONS:** 4 x HDMI inputs; 3 x USB; composite AV; Ethernet; optical digital audio output; headphone output **SOUND (CLAIMED):** 2 x 10W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,119 (w) x 647(h) x 58(d)mm **WEIGHT (OFF STAND):** 16.8kg

FEATURES: Built-in Wi-Fi; Vidaa U smart portal; Auto Sports mode; Ultra Motion image processing; USB/network media player; USB time-shifting; quad-core processor; 2 x HDMI 2.0 inputs

Even affordable sets have designer looks these days...

and Standard modes keep detail crisp and panning shots slick. Inevitably there are motion artefacts around some moving objects, but these are not too intrusive. And you can switch the processing off if you want.

It's also worth hunting the Game mode down. Image lag measures moderately high at 47.6ms (in Standard), but with Game in play this drops to a more acceptable 30.9ms.

The set has an additional surprise dubbed Sports Mode Auto detection. When it identifies sports footage, it automatically offers to swap to Sports video and audio settings. I'm not entirely convinced that's a good thing, but in terms of functionality it's a step up on the football modes we've seen from other TV brands in the past.

Also, this clever detection only works with tuner footage and not HDMI sources, so while it prompts if you're watching Formula 1 on C4, it'll do nothing if you're watching Sky Sports F1 via a Sky O box.

Either way, you're in luck if you want to hear those engines rev. The speaker system may be rated at a typical 2 x 10W, but there's absolutely no shortage of welly and the mid-range makes a decent fist of adding weight to proceedings.

The price is right

This is a superior low-cost 4K UHD flatscreen, which over-delivers on its ticket price. The design is fashionably minimalist, and the Vidaa U smart platform is exceptionally easy to live with, covering off key streaming services and offering copious catch-up courtesy of its Freeview Play tuner. It's only really the low peak brightness that stops this Hisense scoring a winner ■

HCC VERDICT



Hisense 55U7A

→£800 → www.hisense.co.uk

WESAY: Well-equipped and good-looking, this sporty UHD mid-ranger is far from bright, but image quality otherwise impresses.



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Before you can say Great Danes....

Dynaudio enters the multiroom speaker arena with its super-stylish Music range. **Martin Dew** gives the flagship HDMI-equipped model a run for its money

DENMARK-BASED DYNAUDIO HAS a legacy of making loudspeakers for recording studios and homes, but last year created a stir by announcing the imminent arrival of four new 'intelligent' wireless music systems, known simply as Music. Included in the now-available family are four pieces ascending the scale in price, performance and size (namely the Music 1, 3, 5 and 7), with the most versatile and feature-rich, the Music 7, reviewed here.

The most striking facets of the Music 7 speaker cabinet are its considerable 80cm width and expensive-feeling 7.7kg weight. This angular speaker also oozes a hip design aesthetic; wherever you choose to park it, it'll draw some attention to itself. My sample came wrapped in an inoffensive light grey finish, although the removable fabric grilles fashioned by Danish textile house Gabriel are also available in dark grey, red and blue.

On the bottom side of the Music 7's housing are HDMI (for use with ARC) and digital optical audio connections, plus a 3.5mm input jack for analogue sources. A tiny pinhole adjacent to the HDMI port allows a factory reset using the end of a straightened paperclip.

For those looking to play without wires, Wi-Fi is supported, as is aptX Bluetooth.

Removing the front grille reveals six MSP cone drivers. There are two 1in tweeters, two 3in midrange units (both of which are angled slightly off-axis and outwards towards the left and right of the room), and two 5in woofers, angled upwards in line with the sloped cabinet fascia. Dynaudio claims the Class D power amplification for each driver is 50W.

A stereo pair of Music speakers can be established, as well as a multiroom system of up to 16 units across six 'groups'.

The Music 7 manual suggests immediately downloading the combined Dynaudio + TIDAL app (a free nine-month subscription to the streaming service is bundled) onto an accompanying Android or iOS device. Adding the speaker to a home Wi-Fi network is intuitive and app-based instructions guide you through simple steps. The app is critical for controlling the speaker's DSP modes and EQ, as well as setting up your Music Now personal music profile. Volume control can also be accessed via the app, but I found I preferred to use the supplied palm-sized remote control for the most consistently agile response.

Waking up the Music 7 from its network standby mode can be achieved by waving your hand over the unit (proximity sensing), and there are five preset buttons running along its top ridge, to which internet radio station preferences can be assigned via the app itself, as well as

AV INFO

Product:
Premium wireless
multiroom speaker

Top of Dynaudio's Music range

PEERS: DALI Kubik One; Bluesound Pulse 2; Naim Mu-so multiple music profiles and playlists. Those wishing to fire up their Spotify or Apple Music accounts can do so via AirPlay, aptX Bluetooth, or DLNA.

Proprietary audio processing options embedded in the Dynaudio app include NoiseAdapt, a compensatory intelligent volume control which adjusts dynamic range in ambient noise conditions; and RoomAdapt, which takes care of acoustical compromises of less-than-ideal speaker placements in a room (more on that later).

'The Music 7 is capable of rollicking sound quality with plenty of reserves on tap, even at high volume levels'

Use of the app is both an unbridled pleasure and rather addictive. The Music Now profile, which gets to grips with your tastes, and will throw in sample tracks from bands and composers that it thinks you'll like, may be a life-saver for those who get bored of their own playlists. And you can leave the Music 7 pumping out your tunes without the need to have the app open simultaneously.

Blow it wide open

Despite the Music 7's name, it was its physical likeness to an albeit slightly tall TV soundbar that prompted me immediately to shove it underneath a 55in TV for some AV gymnastics. After connecting the Dynaudio via HDMI ARC, it lent both weight and fidelity to announcers' voices and dialogue, while applying sturdy midrange clout to effects and theme music. I did find, however, that bass was coming off boomy with the Music 7 sitting between two glass AV stand shelves. Selection of the RoomAdapt mode via the app worked well to compensate this, with low notes confidently getting back into their stride.

When I moved onto Blu-ray the Music 7 really came into its own. Jerry Goldsmith's opening title music to *Star Trek: The Motion Picture* was presented with an extraordinarily wide and authentic soundstage, so much so that I could even place the glockenspiel in the orchestra. Dynaudio recommends that the Music 7 is positioned at ear height, but it didn't seem to phase the speaker having it placed two feet lower than advised. Furthermore, dialogue in film material was always clear and centred, despite the broad performance envelope.

With the Music 7 located at a higher elevation, I switched to streaming via Tidal, both 16-bit/44.1kHz FLAC from an Android phone, and 24-bit/96kHz 'TIDAL Masters' (MQA files) from the desktop app. Cranking up Daft Punk's *Get Lucky* from the phone app demonstrated just how much drive and presence the Music 7 offers,

SPECIFICATIONS

DRIVERS: 2 x lin tweeters; 2 x 3in midrange; 2 x 5in woofers **AMPLIFICATION (CLAIMED):** 6 x 50W **CONNECTIONS:** 3.5mm input; digital optical audio input; HDMI (ARC) **AUDIO FORMAT SUPPORT:** FLAC, WAV, AIFF, AAC, MP3 (with support to 24-bit/96kHz) **DIMENSIONS:** 819(w) x 201(h) x 185(d)mm **WEIGHT:** 7.7kg

FEATURES: Bluetooth (aptX); Wi-Fi (UPnP/DLNA); remote control; Android/iOS app support; 40Hz-20kHz claimed frequency response; iRadio stations over Wi-Fi; USB battery charging (certain devices); DSP RoomAdapt, NoiseAdapt, MusicAdapt; optional manual EQ settings; proximity sensing 'on' switch; nine-month free subscription to TIDAL music app; optional black steel wall bracket available for £70

PARTNER WITH



SAMSUNG QE55Q9FN:

Partner this premium speaker with a premium flatscreen. Samsung's 55in QLED model (available for around £2,800) offer a deliciously dynamic 4K HDR performance, plus slick one-cable connectivity.

with bass energy swamping the room and Pharrell Williams' piercing vocals flung far from the physical cabinet. But this is not just a speaker for bouncy, modern pop; Herbert Howells' *Sing Lullaby*, by King's College Cambridge Choir, featured distinct, undistorted treble voices, and clearly interpretable height echoes from an imaginary chapel ceiling. Nor did the Dynaudio Music 7 neither detrimentally embellish nor colour the warm analogue origins of Jethro Tull's *Really Don't Mind* from 1972 album *Thick as a Brick*. It's a speaker that takes everything in its stride.

An exceptional hybrid

Unlike its smaller siblings in the family, the Music 7 is clearly designed to double up as a TV audio booster (given its HDMI credentials), as well as a home or office music streaming nerve centre. It's capable of rollicking sound quality with plenty of reserves on tap, even at high volume levels, features a gorgeous design, and is nicely intuitive to use. A modest gripe would be that the price seems a smidgen on the high side, but that may not be enough to ward off buyers looking for something bigger and bolder than much of the competition

HCC VERDICT



Dynaudio Music 7

→ £875 → www.dynaudio.com

WESAYAA sublime-sounding music streaming hub that's also comfortable as a soundbar. Top heavy on price, but there'll probably be little buyer's remorse.



- 1. The speaker's six drivers include a pair of 5in woofers
- 2. Four finish options are available across the Music range

Smart sonics

LG has teamed up with a UK audio expert to fine-tune its sonic hardware. **Mark Craven** likes what he hears with its WK7 Google Assistant speaker

THERE'S NO DOUBT that when people think of multiroom audio, Sonos features pretty heavily. Yet in recent years rival brands have begun carving out slices of multiroom pie, and are now pushing the category forward with the addition of voice control. LG's WK7, a Google Assistant-enabled wireless speaker, offers a level of out-of-the box user interaction that Sonos owners may be envious of.

Google Assistant, for the uninitiated, is the Big G's rival to Amazon Alexa. You get all the expected party tricks with the WK7: use the wake phrase 'Hey Google' or 'OK Google' and you can ask the speaker to read out local weather info or a recipe for a cottage pie, add things to your shopping list or calendar, tell you a (usually pun-based) joke, and much more. There's quite a lot of fun to be had from this functionality, and at times it can be disconcertingly intelligent. Sometimes, though, a sensible question or command is met with a baffled response, and you'll need to be quite tech-minded to make the most of Google Assistant - I make my shopping lists with a pen and paper.

More obviously, you can talk to the WK7 to control music playback. Skipping/pausing tracks, adjusting volume level, calling up your personal Spotify playlists... you'll find yourself happily chatting away quite quickly.

I found the integrated microphone, which can be switched off via a button on the back

AV INFO

PRODUCT:
Google Assistant
wireless multiroom
speaker

POSITION:
LG's first Google
speaker

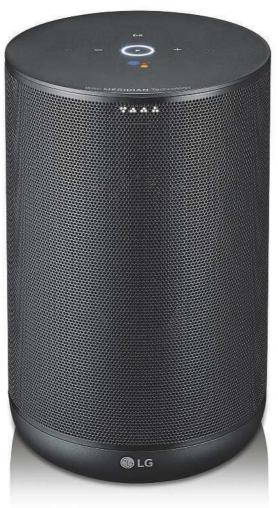
PEERS:
Apple HomePod;

Amazon Echo Plus

Panasonic SC-GA10

of the cabinet, wasn't always up to the task of capturing my mumblings. And having to shout 'HEY GOOGLE!' to be heard over music playing at a loud volume gets tiring. That's where the volume touch keys on the WK7's top come in handy.

To fully use the WK7, you'll need to



download two apps. The first, Google Home, is vital in setting up the speaker to work with voice commands and wider functionality, such as control of Google Home products (smart light bulbs, for instance); the second, LG's Wi-Fi Speaker app, works as a media player for networked/locally stored content, and lets you fiddle with the WK7's EQ.

Two become one

For this speaker, and other 2018 audio products, LG has collaborated with high-end marque Meridian, tapping into its signal processing and hardware design nous. It certainly seems to have been worthwhile, as the WK7 puts in a likeable shift. It's monophonic by design, featuring a single tweeter and midbass driver, so stereo replay lacks any sense of imaging, but it has punch and well-rounded delivery, and reaches a volume level that'll be enough for most users.

SPECIFICATIONS

DRIVERS: 1 x tweeter; 1 x aluminium dome mid-range driver **ONBOARD POWER (CLAIMED):** 30W **CONNECTIONS:** No physical connections **DIMENSIONS:** 135(w) x 210.7(h) x 135(d)mm **WEIGHT:** 1.9kg

FEATURES: Chromecast Built-in; Google Assistant; Clear Voice and Bass Enhancement EQ modes via LG Wi-Fi Speaker app; voice control of Spotify, Google Play Music, TuneIn internet radio and more; multiroom; 24-bit/96kHz upsampling; ALAC, FLAC, WAV, MP3 file playback; microphone mute function; Meridian technology

A row of LEDs signify volume changes and AI activation

Voicing does seem to err toward lower frequencies, but not to the point where its performance feels unduly thickened. There's enough low-end heft here to add genuine body to rhythm sections and electronic party anthems, whereas smaller, less well-endowed designs can sound thin and lifeless. The opening riff/drum beat of AC/DC's Shake a Leg, for instance, streamed via Spotify, pulses with rock'n'roll intent. However, a run out of London Grammar's Hey Now finds the WK7 slightly boomy on some of the bass notes.

Higher frequency details can sound a little shy, but this means there's no overtly crisp or grating aspect to its presentation.

Mid-range info, such as vocals and the haltering tones of Google's Al assistant, are clear and well-defined, and the speaker has enough about it to separate different instruments from complex tracks. It sounds fine with low-quality streams too (all sources are upsampled to 24-bit/96kHz) which is obviously a boon considering the likely end user.

If you want to tweak the WK7's output, however, you'll quickly run into a brick wall. LG's app features just two selectable EQ adjustments, Clear Voice and Enhanced Bass. The former doesn't seem to solely boost mid-range clarity, having a detrimental effect on the speaker's overall balance. The latter does what it says on the tin, but is too aggressive to be used permanently. A little more flexibility would be welcome.

Overall, this smart speaker impresses, not just with the tricks and convenience of Google Assistant, but with its unobtrusive design and audio performance. There are a few minor niggles, though

HCC VERDICT



LG WK7

→ £200 → www.lg.com/uk

WESAY: A solid debut for the new LG/Meridian mashup, offering punchy audio and a neat design. Some room for improvement, though.



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Jack of all trades

Denon's multi-talented HEOS Bar has Jamie Carter streaming Björk, kicking back with The Last Jedi 4K BD and pondering a wireless 5.1 upgrade



A THREE-CHANNEL MONSTER that brings a warm musicality to TV and movies, the all-in-one HEOS Bar from Denon does so much more than merely boost the audio from a flatscreen TV. It's mostly about music, and more specifically, wireless streamed music from the likes of Spotify, Deezer and Soundcloud. As such, it directly challenges the likes of the Sonos Playbar, and for our money,

it wins that contest hands-down.

However, more impressive are its two home cinema features; HDMI switching, and an ability to add wireless rear speakers to create an occasional 5.1 system. And what would you do with those two 'spare' rears when you're not watching films? Whole-home multiroom music, of course.

At just over a metre long, the HEOS Bar is

a good match for 50in

and larger screen sizes

(although there's

using this with a

smaller display,

furniture can

as long as your AV

accommodate it).

to use it; on a wall or

placed in front/below

a TV. Two brackets in

the box act as either

wall fixings or as props

There are two ways

nothing to stop you

AV INFO

Multiroom ready, hi-res capable soundbar

Denon's premium soundbar option, above HEOS Home Cinema bundle

Yamaha YSP-2700; Samsung HW-N650; Sonos Playbar

to lift the product off a TV stand. The HEOS Bar does need to be turned through 180 degrees between its two orientations, which means the logo would be upside down for one of them. Luckily, Denon has thought of that, and the logo pops up and swivels around.

Each of the soundbar's three channels (left, centre, right) are given a pair of 2in x 5in oval woofers and a 1.5in tweeter, with six Class D amplifiers providing power.

While it behaves well on its own and makes for a clutter-free solution, it's possible to add a HEOS Sub (£600) to arrive at a 3.1 system. You can go to 5.1 with a pair of HEOS 1 HS2 wireless speakers (£150 each), and make the best use of onboard Dolby TrueHD and DTS-HD MA decoding.

As with all Denon's HEOS hardware, operation is mostly done via the free HEOS smartphone/tablet app. In use, this offers a similar approach to the app used by Sonos, with the same process of logging-in in-app to specific music streaming platforms, and cueing up songs to play next.

Balanced musicality

Where the HEOS Bar differs from some of its rivals (the Sonos Playbar in particular) is its more balanced musical sound quality. And despite the HEOS app lacking much in the way of audio tweaks, I never felt any real need for them; Björk's Utopia, streamed from the Deezer HiFi platform (16-bit/44.1kHz FLAC),

SPECIFICATIONS

DRIVERS: 3 x 2in x 5in oval woofers; 3 x 1.5in tweeters ONBOARD POWER (CLAIMED): N/A **CONNECTIONS:** 4 x HDMI inputs; 1 x HDMI ARC output; optical digital audio input; coaxial digital audio input: 3.5mm stereo audio: USB; Ethernet DOLBY TRUEHD/DTS-HD MA: Yes/Yes SEPARATE SUB: No REMOTE CONTROL: No DIMENSIONS: 1,100(w) x 148(h) x 72(d)mm WEIGHT: 4.8kg

FEATURES: Wall-mounting option; four built-in IR repeaters; 4K HDR passthrough via HDMI 2.0/HDCP 2.2; Virtual Surround; Movie Surround; Dialogue Enhancer; Music and Night modes; dual-band Wi-Fi; Bluetooth; streams from Spotify, Tidal, Deezer, Soundcloud, TuneIn radio; plays MP3, WMA, AAC, FLAC, ALAC, WAV and DSD files; Dolby Vision; HLG

Denon supplies wall-mount fixings for the HEOS Bar

is conveyed by this soundbar with a good mix of detail and warmth.

Even more detail is dragged from some hi-res FLAC and WAV music files fed from a USB thumb-drive (although, sadly, that USB slot, being mounted on the back, is particularly hard to reach when the HEOS Bar is in front of a TV).

It's almost as adept with movies, offering enough bass response during a run-through of Star Wars: The Last Jedi (Ultra HD Blu-ray) to bring scale to the onscreen action, plus a good sense of channel separation. Denon's virtual surround mode doesn't noticeably change much at all, however.

Another area where the HEOS Bar rises to the cream of the crop is with its HDMI 2.0a switching. Able to passthrough 4K HDR video, it's possible to attach four source devices in a home entertainment setup. In my tests I did experience a few switching delays, but lip-sync was kept in check.

Thoroughly modern

Soundbars that do anything other than disappoint are rare, but the entry here of a heavyweight audio brand is a chance to witness powerful, detailed and warm sonics in spades. Add in the wireless streaming, multiroom, 4K HDR-ready HDMI switching functionality and system expandability, and it's hard to think of the HEOS Bar as anything other than a thoroughly modern soundbar that takes full advantage of Denon's musical heritage ■

HCC VERDICT



Denon HEOS Bar

→ £570 → www.denon.co.uk

WESAY: Able to stream music, act as a system hub and initiate wireless multiroom, it's still the warm musicality that impresses most.



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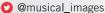
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Panasonic TX-50DX750

TIME ON TEST: 18 months REVIEWER: Mark Craven

AV INFO

PRODUCT: 50in 4K HDR TV

Position: Below the DX802 and DX902 models in Panasonic's 2016 range

PEERS: Sony KD-55XF8505; Samsung 49MU7000 **RELEASED BACK IN** Spring 2016, Panasonic's TX-50DX750 is now two years old. In the world of consumer TVs, that makes it practically ancient; Panasonic, and other brands, have moved on a bit since. Yet outside of the most devoted AV addict, we don't change our flatscreen each year with each new picture quality/format progression. So how well has this TV performed, and where, if at all, does its age begin to show?

What's good about it?

Although a mid-range set (the TV launched with a price tag of £1,200, and then saw price reductions over the next

twelve months), the DX750 looks pretty swish. Its silver bezel is slim enough to allow the screen to blend into whatever room it's sited, and Panasonic's 'Switch Design' desktop stand — which lets you arrange its twin feet into four different positions, depending on your personal taste/available space, is a useful feature. The remote is silver too, which makes it easy to spot amongst a herd of black ones.

A 4K HDR display, the DX750 offers pleasing image quality. Even at this relatively modest screen size, the improved resolution of UHD Blu-ray and satellite/streamed 4K sources is readily apparent. And its sharpness isn't marred by any overt image noise from over-eager processing – this screen marked the 2016 entry point for Panasonic's Studio Master HCX engine.

With SDR 4K content, it's a real crowd-pleaser. Sky Q's $3,840 \times 2,160$ sports coverage, for instance, is a feast of finely etched detail; last month's live broadcast of the royal wedding looked staggeringly beautiful.

HDR playback is accomplished, too. This isn't a massively bright display, nor one offering the widest colour gamut, and I've experienced clipped highlights and banding with certain material, such as the sunlit skies in *I Am Legend*. Yet for much of the time these artefacts aren't disastrous, and the set's ability to deliver the richer

'With SDR 4K, this is a real crowd-pleaser. Sky Q's sports coverage is a feast of finely etched detail'

dynamics and colour vibrancy of 4K Blu-rays is undeniable. Choice cuts, such as *Planet Earth II* or *The Revenant*, are presented beautifully.

Motion handling isn't the TV's strongest feature, nor a weak spot. I've experimented with the preset modes, and customisation tools, of Panasonic's Intelligent Frame Creation engine, but typically leave them deactivated as I find even the occasional frame interpolation artefact very jarring. Left to its native devices, the TV naturally exhibits some motion blur, but isn't a major concern.

Panasonic's Firefox OS provides a decent smart interface. It's crisp and uncomplicated, and proffers a healthy roster of streaming apps, joined by catchup TV via Freeview Play. I've even found myself messing around with some of the freeware gaming titles. The oversized Netflix key on the remote is easily hit by accident though, causing the app to launch when you don't want it to.

What's not so good about it?

A particular niggle that has cropped up during my time with Panasonic's 50-incher is its 4K-capable HDMI provision. There are only two such inputs, which is potentially limiting depending on how you run your sources; if everything is fed via an AVR then you'll be fine, but most people don't,



SPECIFICATIONS

3D: Yes. Active **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR10; HLG (firmware update) **TUNER:** Yes. Freeview HD **CONNECTIONS:** 4 x HDMI inputs; headphone jack; optical digital audio output; 3 x USBs; Ethernet port; component/composite **SOUND (CLAIMED):** 2 x 10W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** 'Supreme Contrast' **DIMENSIONS (OFF STAND):** 1,115(w) x 647(h) x 40(d)mm **WEIGHT (OFF STAND):** 16kg

FEATURES: Studio Master HCX processing engine; HDR remapping; edge LED lighting with local dimming; Ambient Sensor; colour management system; Dynamic, Normal, Cinema, True Cinema and Custom image presets; Freeview Play; Firefox smart TV system (My Home Screen 2.0); built-in Wi-Fi; 4K/HDR Netflix/Amazon support; 1800Hz BMR IFC; quad core processor; HDCP 2.2 support on two HDMI inputs; Switch Design desktop stand

and I found the Panasonic sometimes wasn't happy adding/removing 4K devices. On occasions a 4K source (Blu-ray player, for instance) would work faultlessly, yet if swapped out for a day and then swapped back in, I'd get nothing beyond a black screen. This is where it pays to remember that the HDMI standard can be fussy about the order in which hardware in the chain is booted up, but I've had less frustrations with other TV marques.

As mentioned earlier, the TV's lack of native brightness does impose a limit on its HDR impact – particularly as newer TVs have ramped up their efforts – and its edge LED implementation can introduce some eye-sores. Black levels often appear rock-solid (especially if viewed in an environment with a little ambient light), but the DX750 doesn't have the backlighting nuance to dance through trickily contrasted scenes unscathed. Knocking Panasonic's Adaptive Backlight Control feature down a step, or deactivating it completely, does result in a more stable presentation, but also reduces some of the impact of the TV's black level.

New-breed models are not only more accomplished with HDR (and offer HDR10+, adopted by Panasonic this year, or Dolby Vision) – they offer smarter smarts too. Panasonic's 2018 TVs will be getting firmware updates to support Google Assistant and Amazon Alexa (a trend widespread among other brands too), so if you fancy conversing with your TV, this isn't the model for you (voice control is achievable through Panasonic's TV Remote App, but it's hard going and pretty basic).

Should I buy it?

The TX-50DX750 has long since disappeared from retailer shelves, replaced in 2017 by the EX range, with FX models arriving now. It would be an easy recommendation, however, if purchased second-hand at a bargain price, provided it's still in good condition.

More generally, though, this TV shows that second-tier 4K HDR displays can still dazzle. You shouldn't be too downhearted if your budget stops you shopping in the luxury aisles. Nor is a two-year-old telly already destined for the scrap heap, even if the market is getting smarter, and the HDR formats more convoluted...■

HCC VERDICT

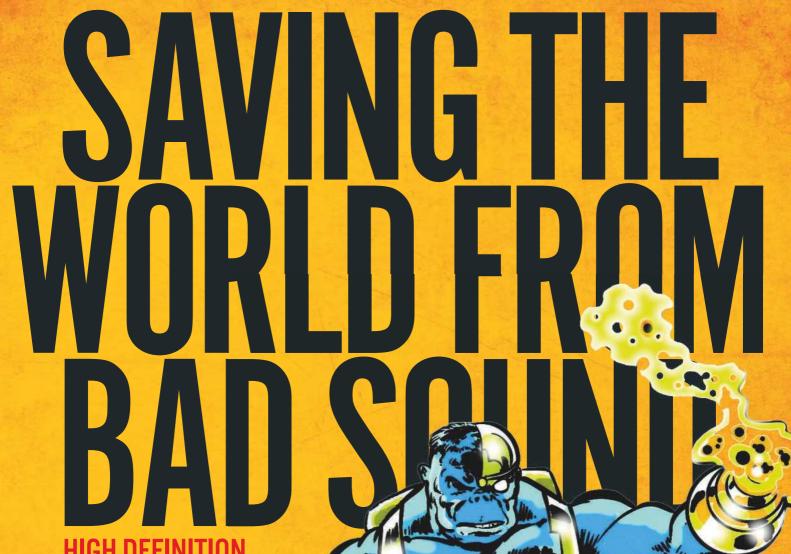


Panason<u>ic TX-50DX750</u>

→ £ex-display/second-hand → www.panasonic.co.uk

WESAY: Although follow-up models have greater feature sets and improved processing, this 2016 TV still makes for an accomplished mid-range 4K HDR display.

- 1. When it launched in 2016, Panasonic's 50DX750 retailed for around £1.200
- 2. The Switch Design stand can be arranged in four different styles



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When it comes to celebrating the best that the cinema world has to offer,

Mark Craven is ignoring the Oscars and getting his geek on with the Saturn Awards

THE BALL GOWNS have been dry cleaned, the goody bags stuck on eBay and the statuette moulds put back in the cupboard for another year. The Golden Globes, the Academy Awards and the BAFTAs have been and gone. Awards season is finally over, right?

Not quite. This month sees the winners announced for the Saturn Awards, a celebration of film (and TV) that you may never have heard of – until recently, I hadn't – but I reckon you might just find agreeable.

The Saturn Awards, I've discovered, are basically awards for films that people actually want to watch. (The Academy Awards, on the other hand, I'm increasingly thinking celebrate films that people only want to watch once they've heard they've been awarded). As an example, this year's big contender is *Black Panther*, with 14 nominations across various categories. In one, it will go head to head for the wonderfully named Best Comic-to-Film Motion Picture award with *Guardians of the Galaxy Vol. 2*, *Logan*, *Spider-Man: Homecoming*, *Thor: Ragnarok* and *Wonder Woman*. Now that sounds like a decent weekend's watching.

To outer space and beyond

The Saturn Awards are organised by the Academy of Science Fiction, Fantasy and Horror Films, and were setup in 1972 (and first dished out in 1973). The idea was simple: to acknowledge the fine work done in the sci-fi and horror genres that was being ignored by everyone else. At first it had just two awards – *Slaughterhouse-Five* and *Blacula* won for Best Sci-fi and Best Horror respectively – but soon spread its wings to applaud actors, directors, SFX, writers, TV shows and more. And it quickly established its somewhat kooky side by announcing

the winner of its Best Actor in a Film category as a tie between James Caan and Don Johnson in 1976 – the former for *Rollerball* (pictured), the latter for *A Boy and His Dog*, a long-forgotten post-apocalyptic tale featuring a teenager and his telepathic mutt. See, I told you these awards were a bit kooky.

The really odd thing about the Saturn Awards, however, is that you, *HCC* reader, could vote in them yourself. But you'd have to pay for the privilege. Browsing its website (saturnawards.org) unearths the option of coughing up a \$25 fee to become an 'affiliate member', giving you the right to vote in 16 of its awards categories. Dig deeper and pay \$40, and you can vote in all 35.

This is obviously not how BAFTA goes about things, but I find it hard to really gripe when the end result of the Saturn Awards works so well.

Ryan Reynolds' turn as *Deadpool* in 2016 was surely worthy of praise. Only the Saturn Awards gave it.

I'll be keeping an eye out this month for the list of winners (quaintly, the actual date for this momentous event remains unconfirmed beyond simply 'June'), because it's important that popular movies (and there are none as popular right now as comic book capers) are celebrated. Not only because they are popular, and they keep the entire Hollywood studio/commercial cinema/home cinema industrial complex ticking over, but because many of them a brilliantly made, lovingly directed, and superbly written.

Most of the time I'd rather watch a Fast and Furious flick over the latest Best Picture Oscar winner. I'm not alone in this, so why does Hollywood – outside of this renegade genre film academy – seem ashamed of its most popular products? ■

Do you think genre films get the respect they deserve? Let us know: email letters@homecinemachoice.com In Mark Craven's head, the Saturn Awards after-party is full of people wearing Star Wars costumes, drinking Pan Galactic Gargle Blasters





Film Fanatic

Prompted by the latest craze on social media, **Anton van Beek** runs through the 10 films that really shaped his fascination with filmmaking...

THOSE OF YOU with a Facebook account will no doubt be familiar with the 'challenge' memes that appear from seemingly nowhere, do the rounds of all your friends, and then disappear just as quickly. You know the sort of thing: 'Seven black-and-white cat photos in seven days,' or '10 great hair metal album covers.' And, oddly, they usually come with the proviso that posts shouldn't include any explanation as to why you made your choices.

The past month has seen my own Facebook feed dominated by friends uploading images of movies posters, for films that have had the biggest impact on them. An intriguing idea, to be sure. But rather than doing it online, I thought I'd put my picks right here instead, and share just why these 10 movies are so important to me...

Alien

I still remember watching this as a kid on a portable TV in my parent's bedroom. I learned for the first time that horror films didn't have to look cheap and employ unconvincing rubber monsters.

Suspiria

As well as scaring me half to death, Dario Argento's psychedelic 1977 shocker *Suspiria* blew my mind with its mix of audacious, colour-saturated visuals and Goblin's overwhelming synth soundtrack.

The Rocky Horror Picture Show

Teenage me tuned in expecting just another horror film. What I got was a weird and wild first taste of musical cinema. I haven't looked back since.

The Empire Strikes Back

Despite being born in 1975, *The Empire Strikes Back* was the first *Star Wars* film I ever saw (I didn't see

Star Wars itself until a double-bill re-release of the pair a year later). That said, I already had the toys, wallpaper, duvet cover, etc. It's still impossible to quantify the effect this spectacular sci-fi sequel had on shaping my movie-loving mind.

Das Cabinet des Dr. Caligari

My first exposure to expressionist cinema, and the film that prompted me to shift from wanting to make movies to writing about them instead.

Evil Dead 2

As much as I adore the original, the mix of comedy and carnage in Sam Raimi's sequel hit home so perfectly it feels like he made it just for me.

Blue Velvet

In 1986, David Lynch taught me there were far scarier things lurking in the shadows of suburbia than in any horror film I'd ever seen.

Jurassic Park

It may not even rank in my 'Top Five' Spielberg films, but the mix of practical and CG effects used to create *Jurassic Park*'s dinosaurs inspire a specifically cinematic sense of awe every time I watch it.

L'Année dernière à Marienbad

I'm still not sure what it all means, but I've not been able to stop thinking about Alain Resnais' enigmatic and dreamlike movie since I first saw it.

The Smurfs and the Magic Flute

The first movie I saw on the bigscreen. It's rubbish, but all film fanatics have to start somewhere ■

Which films have had the biggest impact on your life? Let us know: email letters@homecinemachoice.com Anton van Beek's idea of a perfect film is a Smurfs horror written by Sam Raimi, directed by David Lynch and scored by John Williams





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76 OPINION



In The Mix

Jon Thompson recalls an eerie silent screening of *2001: A Space Odyssey*, before looking forward to the movie's 4K HDR debut and singing the praises of 70mm fan Christopher Nolan

IT'S FIFTY YEARS since the film 2001: A Space Odyssey changed the landscape of cinema forever. It was directed by a true genius. I was fortunate to have known Stanley Kubrick — as well as having his grandson work for me — and he was a man who loved photography and hi-fi, so cinema was a natural place for these two passions to collide. When it came to movies, he wanted to get the best not only in a technical sense, but in the emotional experience too; he knew that the two would fuel each other. These days neither seem to be a consideration, except with a few filmmakers like Christopher Nolan. More on him in a bit.

Before you ask: no, I didn't work on 2001:

A Space Odyssey — I'd need to be a time-traveller.

My connection with the film would not happen until years after its release. A bizarre request at the time, I was asked to sit at the back of an empty screening room at Pinewood Studios with a tripod-mounted Hi8 camera and film each reel of a mute print projected in 70mm by Cyril, the chief projectionist at Pinewood. Sitting in a cinema watching a genuinely silent film is an experience, and in the case of 2001... it was a real education. Kubrick's classic works very well with no sound, its images speaking in a bold and big way on a huge canvas.

I had at this point only ever seen the film when it was broadcast on TV by the BBC. This itself was a unique screening. TVs at the time were 4:3, but it was felt that some shots were only working in the 2.20:1 aspect ratio the movie was shot in. The BBC kept those shots in 2.20:1 and filled the top and bottom of the image with stars, as it didn't want any black bars...

2001... was shown this year at the Cannes film festival with Christopher Nolan presenting what

he called an 'unrestored' 70mm version – the idea being to give a modern audience a chance to view as if it was 1968 all over again. And I agree with Nolan when the question of what Kubrick would do with the film now came up, as reported in *Variety:* 'There's a trend and a danger of sitting there going, "What would the filmmaker have done if he had 5.1 sound? Or Dolby Atmos? Or laser projection?". That's not a road I felt in any way comfortable going down.'

Photochemical brothers

Unrestored doesn't mean quite what you might think, however. With his *Dunkirk* and *Interstellar* director of photography (Hoyte van Hoytema) roped in, Nolan worked with the restoration team at Warner Bros to give the movie a clean up. But purity was the aim of the game. Explains Warner Bros: 'This 70mm print was struck from new printing elements made from the original camera negative. This is a true photochemical film recreation. There are no digital tricks, remastered effects, or revisionist edits.' Making this a genuinely accurate restoration that I am sure Kubrick would have approved of.

The best way to see 2001... in its 50th year is surely this – in analogue form, in the limited 70mm roadshow that has been going around recently.

However, if you've been unable to get to a 70mm screening, the film will be released on UHD Blu-ray in the Autumn, assembled from scans of the original camera negative in a version supervised by – you guessed it – Christopher Nolan. This will surely be another disc to push your system to the limits, a real must-have. The reason you bought into 4K is to watch image quality like this

What other classic films deserve a re-release in cinemas? Let us know: email letters@homecinemachoice.com When he's not in his screening room, Jon Thompson tweets about Hollywood gossip, movie-making and digital mastering at @johnnyfocal



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Feedback

Got an axe to grind? Need to comment on current tech? Want to share your knowledge with our readers? **Team HCC** is here to help

I love my new HDR PJ!

Hi guys. Thank you for the Star Letter award [Time For an HDR Upgrade, HCC #281]. Firstly, my apologies for suggesting on the change of name for your magazine to HDR Choice. I realize now the impact of HDR on the AV world.

In early March this year I took the HDR plunge and went ahead to trade in my Sony VPL-VW500ES (non-HDR) projector for the new Sony laser-based VPL-VW760ES (with HDR). Of course I had to top up the cash purchase significantly as the trade-in value for the 500ES was a fraction of the 760ES price. This plunge was taken before reading your reply to my letter as my copy of *HCC* #281 only arrived at my doorstep late March.

Prior to purchasing the 760ES, I poured over numerous articles on HDR in your magazine and watched You Tube presentations. After all, it is a pricey PJ and I had to do my background research. I had initially wanted to see a demo unit of the 760ES but none was available in Malaysia at that time. Sony Malaysia informed me that if I ordered a 760ES it would be the first.

I also traded in my Samsung 4K Blu-ray player, the UBD-K8500, after a year of



frustration with its hopeless remote, for an Oppo UDP-203.

So Mark Craven and John Archer – I now realize why *HCC* bombarded us with so much news and features around HDR. Simply, HDR is just impossible to ignore.

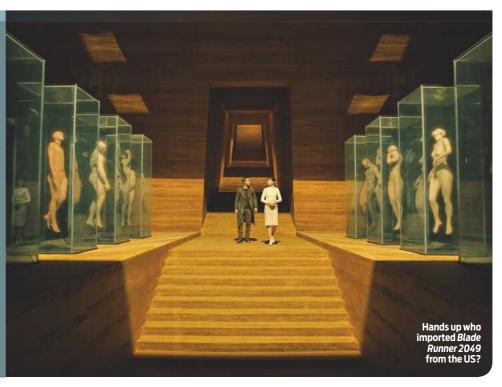
After excitedly unboxing and setting up the 760ES, I played the *Planet Earth* 4K Blu-ray on my Oppo UDP-203. Immediately obvious was how sharp and detailed the images are compared to my non-HDR Sony VPL-VW500ES. I am not sure if other 4K HDR

Shopping around for BDs

Just wanted to reply to Nev Bussey's letter regarding the *Blade Runner 2049*American Blu-ray with the Dolby Atmos soundtrack [*Feedback*, *HCC #286*].
I picked mine up from a guy with a [US] website called Blu-rays For Everyone.
I paid about £20 (delivered) and incurred no import duty costs.

It might be worth Nev taking a look, as most of the companies we all used to use have disappeared, and discs turn up on eBay/Amazon at silly prices!

Anton van Beek replies: Thanks Steve. There are options available for importers (although as you say there can frequently be a premium), and with the split developing between US and UK markets many of us will feel forced to use them. At least discs are relatively 'budget' purchases. I wouldn't want to import a TV!



projector models would have a similar impact but the transition of image quality and detailed sharpness from my Sony 4K non-HDR PJ to the 760ES was nothing short of sensational. Watching Blade Runner 2049 was simply jaw-dropping – never had I seen so many lines on Harrison Ford's face. I will be watching Thor: Ragnarok 4K next. Also, playing FIFA 18 on my PS4 Pro is joyous with HDR mode on and gameplay seems much smoother. Anthony, Malaysia

John Archer replies: I'm firmly in the HDR camp. It can make such a difference to the viewing experience, and have a greater impact on the look and feel of a movie than is achievable simply via extra pixels.

However, I've no doubt that some of the joy you're experiencing with your Sony VPL-VW760ES isn't just from its HDR playback support. As a laser-based model (and at more than twice the price), it offers superior black levels and light handling than the VW500ES. It'll give a boost to SDR content too!

Mark Craven replies: I'm envious of your new projector purchase Anthony, and glad you're enjoying a 4K HDR lifestyle.

While we're on the subject of things being 'immediately obvious', I've decided that some people just don't see a difference between formats, or, more likely, just don't care.

When the royal wedding was broadcast last month, I made sure that family members who wanted to watch it (I didn't) were tuned in to Sky's 4K feed, rather than an HD broadcast. When I popped my head in to check out the image quality (not the wedding dress), I asked what they thought. The general response was, 'Oh, it looks quite good' — when I thought it looked absolutely stunning and clearly a massive step up in detail and sharpness...

A post-Oppo world - part I

Hi Team HCC. What a shock that Oppo is no longer making Blu-ray players, DACs, headphone amps and headphones.

If it can't make it pay what does that say for the rest? And what about the other companies that slot Oppo 'bits' into their products – Electrocompaniet and many others? Peter

A post-Oppo world – part II

I'm really not surprised that Oppo has pulled out of the Blu-ray player business. In this day and age, its hardware is priced far beyond what the mass market wants to pay!

The Oppo UDP-203 has sold for £650, and the UDP-205 twice that. You can buy a 4K TV for less, and there are 4K Blu-ray players available for less than £200.

Last issue you discussed Panasonic's new DP-UB9000 (£1,000) and a new Pioneer deck (price not yet confirmed but presumably

Star Letter...

Where's the magic?

In recent issues there have been comments about how people don't go to the cinema anymore but prefer to watch movies at home. This got me to thinking about why I changed from someone who went to the cinema several times a week to not going at all. I think, for me, the reason can be summed up by 'lack of magic'. Let me explain...

Movies. In my heyday of going to the cinema, the 1970s-1990s, I often came away from a film wondering 'how did they do that?'. Films like Star Wars, The Towering Inferno, Earthquake, etc, showed things I'd never seen before. Real flames were used in real sets, backlots were destroyed for an earthquake and how did that model get to look like a giant Star Destroyer? I agree that a lot of today's films simply could not be made without CG technology, and I still enjoy watching them, but is there any magic left? Nowadays I watch a film and just wonder how much green screen they used; fake sets, fake flames and even fake actors. We now know virtually anything can be done with computers so what is left to be really amazed at?

Cinema. As a child I lived in North London and the Odeon Wood Green, Regal in Edmonton and ABC at Turnpike Lane were my locals. From the mid-seventies I started going to the West End and The Odeon Leicester Square, Dominion Tottenham Court Road, Empire Leicester Square and London Pavilion became my cinemas of choice. Going to any of these cinemas was an event, and, as a child, magical. These cinemas used to be more like theatres, with ornate decoration, balconies and curtains that swung open to show the film and close at the end. All but the Odeon Leicester Square have gone and the Empire has been carved up. Today cinemas are nondescript black boxes and the last film I saw in a VUE cinema, Spectre, looked dreadful with absolutely zero contrast. I spent the entire film thinking how bad it looked. Of course, not everything was great in the old days – if you didn't see a film within the first days of opening it would be speckled from being run through

the projector so many times, and films were only in stereo, if you were lucky. But the cinema was the only place to really see a film. The alternative was to wait three years for it to come on TV and then be heavily cropped to fit on the square box. Also, people today don't seem to go to the cinema to watch a film but to have a conversation, eat their dinner or check their mobile phone. Why bother?

Home Cinema. As noted above, not so long ago to see a film as intended you had to go to the cinema. Now I have a 75in TV to show the film and Dolby Atmos sound. Now this is magical! Only a few years ago a setup like this would only have been within reach of a Premier League football player. Films are released on Blu-ray within months, not years, so I just have to avoid spoilers for a while. I can now sit in comfort, and quiet, with a nice drink and enjoy the movie. My biggest regret is I don't have space for a proper home cinema with a projector and curtains!

Perhaps I have rose-tinted glasses but I once loved going to the cinema. The last several times I went were disappointing, with noisy people, dirty auditoriums and badly shown films. I guess it's all down to cost but I can't help thinking that the combination of today's technology and the old style of cinema could be a winner. Or do the majority of people who now go to the cinema simply not care. What do others think?

Gary Thomas

Star letter-writer Gary grabs the award-winning *I, Tonya* on Blu-ray, courtesy of Entertainment One. Starring Margot Robbie as the Olympic figure skater and Allison Janey as her domineering mother, this outrageous and blackly comic biopic is available to own on Digital Download from June 18, followed by Blu-ray and DVD on June 25.

expensive). I wouldn't be surprised to see these brands eventually struggling with such products.

Yes, these sorts of high-end players have their audiophile bells and whistles (SACD playback and analogue audio outputs, for instance), but what do most 4K Blu-ray player consumers really need? Just a disc drive, HDMI output, maybe a digital optical audio output and a quiet-running and nice-to-look-at

design. Brands that can do that will be the ones that are really successful. Garth Nigel

Mark Craven replies: Oppo has departed but I don't necessarily see that as a sign that the high-end of the Blu-ray market is in poor health, Garth. It certainly is a small market, in the wider scheme of things, but there's always room for premium hardware. And Peter, as for companies that have previously taken Oppo's player architecture and used it to launch modded, premiumperformance versions, I guess they will be looking around for another base model to work with...

I want TV shows in HD

I was reading the article in HCC #284 by Anton van Beek [Film Fanatic] about revisiting his favourite TV shows on Blu-ray, and why some major Hollywood distributors seem to want to make it so difficult. I totally agree with Anton on this one. Why are they releasing TV shows on DVD, and not Blu-ray?

For example, Paramount Studios and Showtime Network released Season One of *Billions* on Blu-ray in 2016 and then in 2017 they decided to release Season 2 on DVD? Why?! I mean, the future is now HD and 4K, not 720p. Also Showtime and Paramount released three seasons of *Ray Donovan* on Blu-ray and Season Four and Five and possibly Six on DVD.

Now I think it might be cheaper for the studios to release on DVD than Blu-ray, but can you imagine if HBO released *Game of Thrones* on DVD only? It would be a disaster for HBO and it wouldn't be a best-seller because of picture and sound quality. *Kerry Bourke*

Anton van Beek replies: I feel your pain Kerry. There have been a number of times when I have stopped collecting a series because the distributor has pulled the plug on releasing it on Blu-ray. The Americans and Modern Family both suffered this fate in the UK, while others such as Masters of Sex and even Channel 4's Humans didn't even get that far, having been relegated to DVD-only on these shores, despite enjoying Blu-ray in other territories.

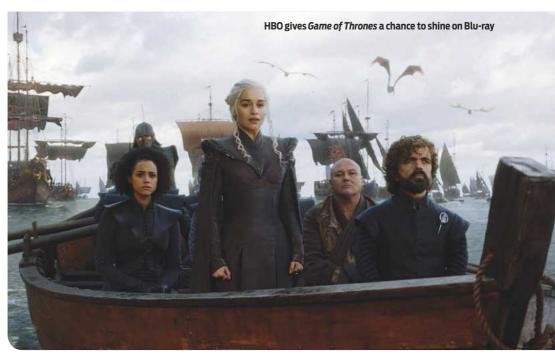
Thankfully, the situation isn't always set in stone. For instance, BBC Worldwide eventually revisited the first series of *Happy Valley* and the first three series of *Inside No. 9* on Blu-ray after initially only releasing them on DVD.

These decisions will always be made by the bean-counters, and clearly those working at the Hollywood majors have decreed that only specific types of shows will turn a profit on Blu-ray, and an even smaller number would actually be capable of doing that in the UK.

Discs aren't dead

When you see that some upcoming or pre-order titles on standard or 4K Blu-ray Steelbook are selling faster than cheeseburgers at McDonald's – I have literally seen that 'sold out' sign appear in less then one hour since a launch – then you realise that physical media is far from dead.

However, at the moment the dynamism of releases has changed. Sometimes movies get released on DVD but not on Blu-ray. Or



released on Blu-ray but not on 4K. At least a relief is that Blu-ray, unlike DVD, stands good against 4K Blu-ray in picture quality terms.

The disc is 'dead'? Long live disc! Romaulds Pizans

Mark Craven replies: Nah, the disc isn't dead. However, as we cover on p13, overall sales are falling and seem to be being propped up by 'superfans' – HCC readers, in other words – who buy numerous physical releases throughout the year.

The danger for the disc market is if such superfans can be persuaded to get their home entertainment thrills from elsewhere. Rakuten TV, for example, is launching Dolby Atmos and Dolby Vision downloads, although its small launch category isn't going to turn the head of a serious Blu-ray collector.

But what is it exactly that we like about physical media? Is it the picture and sound quality? Is it the extra features that are (sometimes) added to the package? Is it the packaging and artwork itself? Or is it simply the ability to have something on a shelf, on display, and ready to watch whenever? I'd love to hear your thoughts!

Bring on binaural audio

I don't know if you have ever covered the surround sound format for use by headphones, binaural audio, but feel that it is such a creative and immersive 3D sound format that it deserves some coverage. Not only does it create the illusion of sound placement around you, but also above, below and distance too, which can sound utterly amazing when done correctly.

As a home cinema audio format it may not be suitable, but for watching films on the move or even watching films at night when you don't want to disturb your neighbours when Tom Hanks storms the beach on D-Day, then the option to slip on some headphones and to be able to have wonderful 3D audio which is even more directional than speakers is great. It may be more suited for the gaming world or VR, but I feel that films should have the option of a binaural soundtrack.

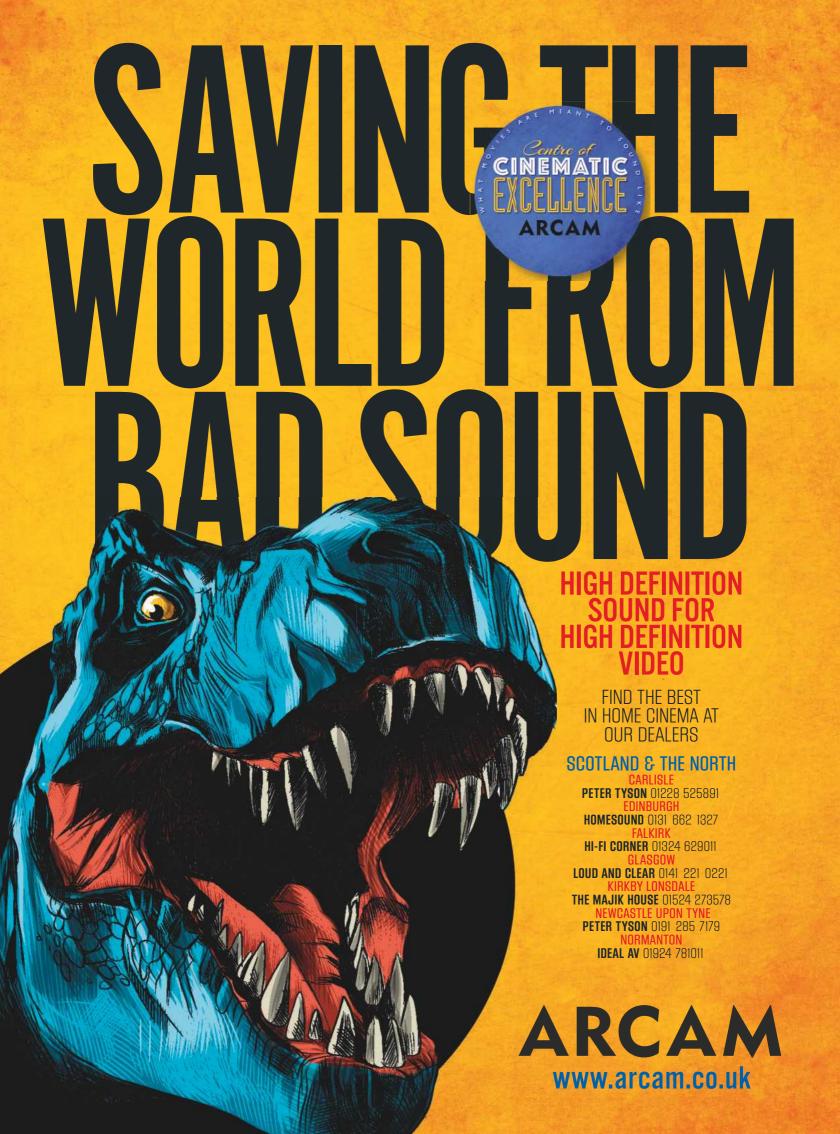
I know the BBC have experimented with this format, so at least it is taken seriously enough to warrant some experimentation from a major player in broadcasting. It would be interesting to see if the major film studios would dip their toes in the binaural waters to give home cinema enthusiasts further options. *Nick Celli*

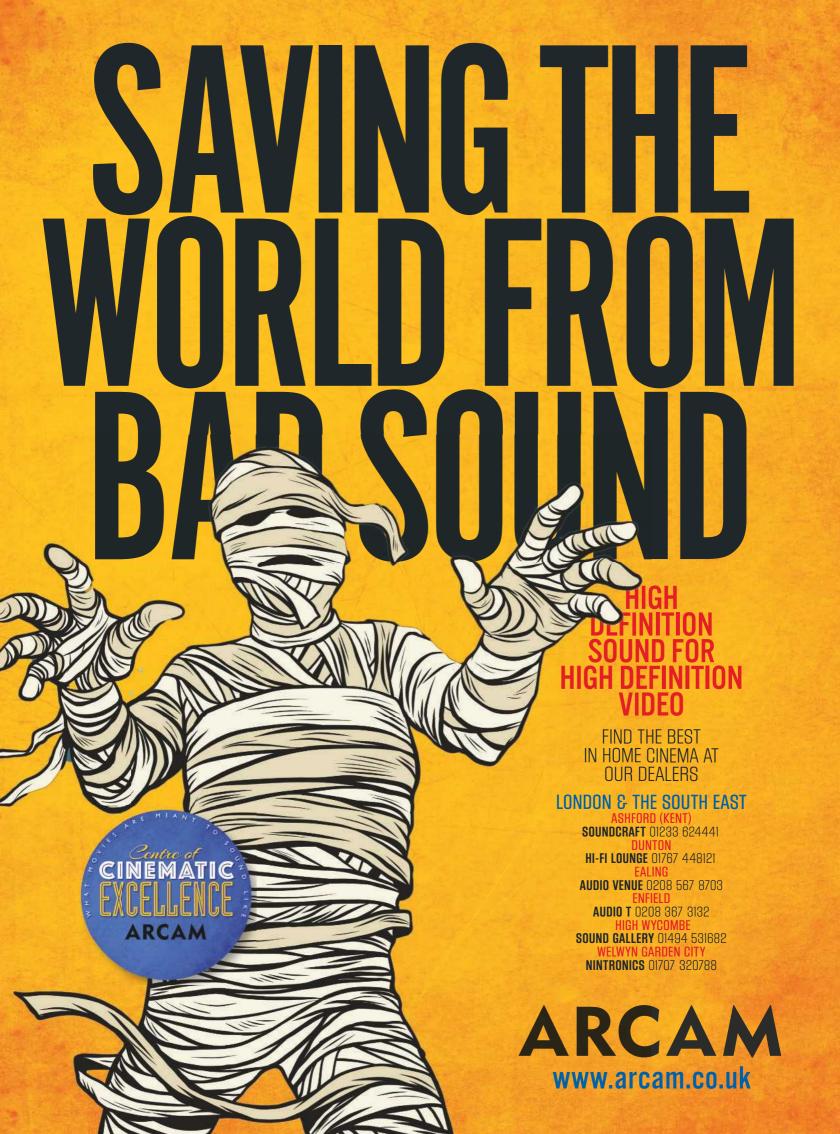
Mark Craven replies: We covered binaural audio in *HCC* #274 when the BBC added a binaural track for a *Doctor Who* episode, available through iPlayer. This sounded very impressive indeed, but was more of a technology trial than an advance launch.

I'm not sure where the Beeb has got to now with binaural audio, but at the time its Design and Engineering team said binaural encoding tools would be useful in the future for crafting a single mix than can optimise for whatever system a listener has – speakers or headphones. This makes much more sense for broadcasters; headphone-delivered binaural is surely primed for VR and gaming applications

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The Bridge: Complete -All Four Seasons

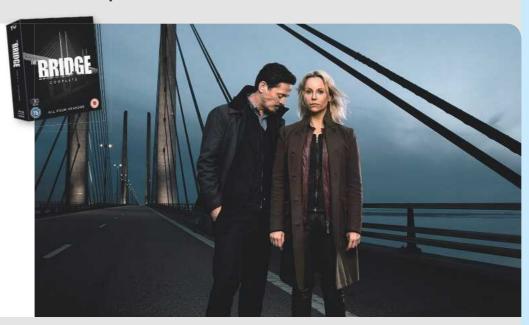
Arrow TV is bringing the final season of the award-winning Scandinavian crime series The Bridge to DVD and Blu-ray on July 2 as both a standalone release, and in a boxset collecting all four seasons. To celebrate the release, we've joined forces with Arrow TV to give away two The Bridge: Complete – All Four Seasons Blu-ray boxsets!

Ouestion:

Which Swedish actress plays the role of detective Saga Norén in The Bridge?

Answer:

- A) Alicia Vikander
- B) Sofia Helin
- C) Ingrid Bergman







Iron Monkey

Hailed by critics as one of the greatest martial arts movies ever made, Yuen Woo-ping's kung fu classic *Iron Monkey* makes its UK Blu-ray

debut on June 18, courtesy of Eureka Entertainment. To be in with the chance of winning one of five Blu-rays, simply answer the following correctly...

Ouestion:

Yuen Woo-ping choreographed the fights for which groundbreaking sci-fi film?

Answer:

- A) The Matrix
- B) Blade Runner
- C) 2001: A Space Odyssey



StudioCanal has re-released the legendary British war movie The Dam Busters on DVD, Blu-ray and Collector's Edition Blu-ray with a new 4K restoration to celebrate

the 75th anniversary of the mission the film is based on. To mark the release we have five copies of the Blu-ray up for grabs, courtesy of Vintage Classics and StudioCanal.

Question:

What name was given to the real dam busters mission carried out by RAF No. 617 Squadron?

Answer:

- A) Operation Chastise
- B) Operation Berate
- C) Operation Punishment





Birth of the Dragon

Loosely inspired by the infamous fight between the young Bruce Lee and martial arts master Wong Jack Man that took place in 1960s San Francisco, Birth of the

Dragon is now available to own on DVD and Blu-ray. And thanks to Altitude Film Entertainment we have five Birth of the Dragon Blu-rays to be won!

Ouestion:

What is the name of the martial art founded by Bruce Lee?

Answer:

- A) Krav Maga
- B) Jeet Kune Do
- C) Ma Po Tofu

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Certified: AV-Holic!

HCC reader **Chris** has used the second-hand and ex-display market to assemble an affordable projector-based setup that brings movie, TV and gaming entertainment to his living room



Welcome to the AV-Holics Hall of Fame – introduce yourself!

My name is Chris Rule, I'm 31 and I'm a manager in the rail industry.

How long have you been into home cinema?

About 10 years now. I started off more as a computer geek really – the first home cinema product I bought was a used Cambridge Audio AV receiver to connect to my custom water-cooled gaming PC. I then wired Wharfedale speakers to that

and it all evolved from there. I don't even have a PC now.

What kit is in your current cinema setup?

I have an Epson EH-TW7200 Full HD projector projecting on to an 80in pull-down screen (I also have a TV behind the projector screen but who knows what it is — a Panasonic maybe?). The speakers are Roth Audio's OLi RA 5.1 pack, with floorstanding RA4s at the front and standmounted RA1s at the back, plus the C30 centre channel and KH30 subwoofer.





Powering the system is a Denon AVR-X2400H receiver. I use a Samsung PVR for Freeview HD, a Roku Streaming Stick+, a Sony Blu-ray player and a Sony PlayStation 3.

What was the last thing you added to your system?

The Epson EH-TW7200 was a recent eBay purchase. Almost everything in the system was bought used or ex-display. I'd never have what I have if I had to buy it all brand-new.

Are you thinking of upgrading anything else?

I really need to pause on the upgrades for a while, but I would like a better subwoofer. Maybe a sealed unit to give the bass a bit more punch and finesse. Some Atmos modules will probably happen first.

Right now I just can't justify the expense of a 4K upgrade. The hi-def images from the Epson projector are impressive enough for the moment.

Whereabouts in your house is the cinema room?

In our living room. Once I moved out of a room in a shared house and into my own place it made sense to put the amp and speakers in the living room with the TV.

Did you get any help from professionals when fitting out your system?

No. It didn't require a great deal. It's not exactly a discreet setup. The original projector purchase five years ago (an Epson EH-TW3200) was very much on a budget, which is why the current one is on a shelf rather than properly mounted.

What's your favourite bit of kit and why?

I love the Roth RA4s at the front. I saw the HCC review a few years ago [see HCC





#233], not long after that I found them at half the price on Roth's own eBay store. They were delivered the same evening by one of their directors who happened to live near me! I like the Roth's slightly industrial and imposing look; I can never understand why people pay a fortune for speakers to be hidden away from sight.

What movies/discs do you use to show off your system?

I use the intro sequences from the *The Dark* Knight Rises and Quantum of Solace. I've also

recently bought Kong: Skull Island after seeing it's everyone's favourite demo disc.

And what are your Top 5 favourite flicks?

I like The Dark Knight Trilogy and the Bourne films (but not ... Legacy). Other favourites are Ex Machina, ... Fury Road and A Monster Calls.

Do you stream movies/TV from Netflix/Amazon/Sky etc?

Yes, Netflix and Amazon Prime via the Roku Streaming Stick+.

Does the cinema setup get a lot of use?

Yes. For all our movies or Netflix viewing we use the projector. It's only really sitcoms or general channel flicking when we'll use the TV.

And what do your friends and family think of the cinema room?

Everyone loves it; most people hear about it and think it's a very strange thing to spend money on. Then they experience it and start listing the movies they'd like to watch...

Share your cinema system in the mag!

If you want to be in HCC, you'll need to send us some hi-res images of your cinema room. Here are a few tips...

- **1.** Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready. 2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a
- flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
- 3. Let some light in. While we tend to watch
- movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.
- 4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.
- **5.** Don't be shy. Send a picture of yourself! **6.** Show us more. Got pictures of your room
- before it was a cinema? Or snaps of work being done? We love to see these, too.

Now what?

Email your images to

letters@homecinemachoice.com with the subject heading 'AV-Holic', and provide your answers to the relevant questions above - then we'll be in touch!

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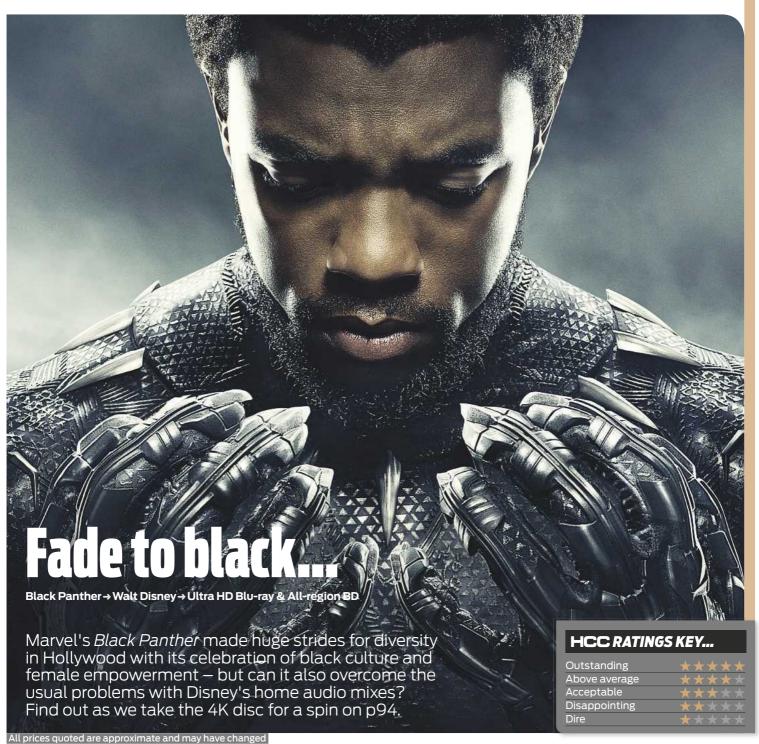






PLAYBACK

→**SOFTWARE HIGHLIGHTS GLADIATOR** Epic 4K upgrade for Ridley Scott's historical hit **DEN OF THIEVES** Cop thriller steals a few tricks from Michael Mann **EARLY MAN** Getting animated about football **DIE HARD** Action classic celebrates its 30th anniversary in style FIVE TALL TALES Indicator's latest boxset is a must-own for fans of the Wild West & MORE!





Once you've experienced this stunning 4K upgrade of Ridley Scott's historical romp, you will be





Only last year Ridley Scott was still teasing the idea of a *Gladiator* sequel

HCC VERDICT

Gladiato

→ Universal Pictures → Ultra HD Blu-ray & All-region BD → £30 WESAY: Ridley Scott's Roman epic has never looked or sounded better than it does here.

Movie: ***

Picture: **

Audio: **

Extras: **

OVERALL: **

→ GLADIATOR

Gladiator easily ranks as one of Ridley Scott's greatest films, which is really saying something when you're talking about the director responsible for Blade Runner and Alien. Its massive scale, stunning evocation of the Roman Empire and peerless fight scenes came together to make it a timeless classic when it hit cinemas in 2000, and it subsequently spawned a rebirth of the sword-'n'-sandal genre. Scott and leading man Russell Crowe (as soldierturned-slave Maximus) have since teamed up four more times, but never quite reached the heights they did here.

Picture: Happily, *Gladiator*'s visual glories look better than ever in their new 4K Blu-ray clothes (especially if you can take advantage of Universal's new Dolby Vision HDR grade).

There's a substantial uptick in detail here compared with previous releases. This is perhaps most evident in the pores and hairs in the film's often extreme close-ups, as well as the extra depth and refinement of the film's interiors. Your respect for the superb production design will go up another level.

Largescale exteriors also benefit from the extra resolution, although they can sometimes expose the film's use of 2K CG effects.

HDR expands the light range of Scott's gorgeous photography in spectacular fashion. Exterior sequences look much more

natural, whether they're appearing under Germania's grey clouds or the painfully perfect blue skies above Maximus's home.

High-contrast sequences in Commodus's palace and the rooms beneath the Colosseum are rich and dynamic, as beautifully inky blacks share screen space with spectacularly bold whites and colours. This is particularly striking with the Dolby Vision presentation, as is this 4K release's enhanced colour palette, which does an astute job of emphasising, for instance, the difference between the vibrant opulence of clothing of the Roman 'royalty' and the regular soldiers. Skin tones appear more natural too, especially during bright exteriors.

Audio: Universal hasn't just upgraded *Gladiator*'s picture quality for this 4K revisit – the film also packs a DTS:X remix that opens up Scott's action sequences. Individual arrows now fly overhead as well as across the sides during the movie's opening battle, and the fights inside the Colosseum and other venues make use of the format's more precise placement of effects, enhanced dynamics and sense

of scale. In these moments, when you're standing in an arena with tiers of baying spectators rising around you, it feels like an essential upgrade. *Extras:* Extra features match those found on *Gladiator*'s previous two-disc Blu-ray release. While it's a shame there's nothing new, it's hard to complain about a package that includes two versions of the film (original and extended, both in 4K), two engaging commentary tracks, and many hours of featurettes and documentaries.

The Mercy

StudioCanal → Region B BD



Colin Firth and Rachel Weisz star in this true story about amateur sailor Donald Crowhurst, whose attempt to win

a 1968 round-the-world yacht race ended in disaster. While it could do with a little more Werner Herzog-style mania, James Marsh's film succeeds in making us sympathise with the increasingly unhinged Crowhurst – and what begins as a plucky underdog story becomes something more affecting and unsettling. This Blu-ray partners its attractive 2.40:1 Full HD encode with a DTS-HD MA 5.1 mix that gets steadily more creative the more warped Crowhurst's mind becomes.

Phantom Thread

Universal Pictures → All-region BD



A film about a 1950s dressmaker who takes a waitress as his latest muse – it doesn't sound like the stuff gripping

cinema is made of, does it? But writerdirector Paul Thomas Anderson's latest is in fact a deliciously twisted, compelling and funny battle of the sexes between two fascinatingly flawed characters (brilliantly and believably brought to life by Daniel Day Lewis and Vicky Krieps). As you would hope, the Blu-ray's 1080p encode is absolutely gorgeous, and if the DTS:X mix is lacking in punchy dynamics, it does at least help elevate Jonny Greenwood's sumptuous score.



I. Tonva

Entertainment One → Region B BD



This darkly comic biopic of figure skater Tonya Harding takes what could have been merely an exploitative account of a sensational sports scandal and turns it into a biting study

of domestic abuse and the public's complicity in how Harding's life unravelled. Powered by terrific performances, I, Tonya is a great piece of 'feel bad' cinema that should have no trouble finding fans, whether you care about skating or not. This Blu-ray's DTS-HD MA 5.1 audio and 2.40:1 Full HD visuals will only aid your appreciation – even if the VFX assisting Margot Robbie's skating sometimes leaves a little to be desired.





Gerard Butler feels the *Heat*

Michael Mann is the real victim of theft in this gritty Los Angeles crime saga

→ DEN OF THIEVES

Hard-drinking, hairy-chested, thuggish cop 'Big Nick' O'Brien (Gerard Butler) and his team are hot on the trail of a bunch of highly-skilled thieves targeting a supposedly invulnerable Federal Reserve Bank in this derivative tale of cops and robbers.

Graduating from scripting the dismal London Has Fallen to directing his first feature, Christian Gudegast is evidently a man who has watched *Heat* one too many times. From its attempts to mirror its gangs of cops and robbers, to the music cues, cityscapes and climactic foot chase/shoot-out, Den of Thieves goes out of its way to remind you of Michael Mann's 1995 L.A. crime flick. This wouldn't necessarily be much of a problem if Gudegast's film demonstrated even a modicum of the sort of professionalism or quality of its obvious inspiration. But it doesn't. Thanks to poor writing, languid pacing and overheated performances, it just comes off as a lame imitation.

That said, the final shootout is pretty exciting. Picture: Shot digitally, Den of Thieves arrives on Blu-ray with a cleanly delineated 2.40:1-framed 1080p encode. For the most part the film sticks to a fairly natural appearance, which draws out plenty of fine detail in both brightly lit and darker scenes. However, the more striking moments actually come from a couple of interiors – Ziggy's Hofbrau bar (Chapter 2) and the strip club (Chapter 6) – which fill the entire screen with bold reds and blues without impacting negatively on the clarity of the image. Audio: The movie's DTS-HD Master Audio 5.1 soundmix is a pleasing affair that creates a vivid three-dimensional soundscape for the characters



to bounce around in through subtle but immersive ambient effects. The final street shoot-out (Chapter 10) is the movie's most obvious 'demo' sequence, though. This powers home with thunderous LFE, plenty of reverb accompanying each gunshot, and the sound of ejecting shell casings rattling down all around vou.

Extras: The Alpha Males, Alameda Corridor and Into the Den featurettes never rise above bog-standard EPK fodder thanks to their truncated running times (between two and three minutes). More informative by far, from a production standpoint, is a chat-track by writer/director Christian Gudegast and producer Tucker Tooley. And that's your lot.

Present on Universal's US Blu-ray, but missing from STX/Sony's UK release, are an eight-minutelonger 'Unrated' cut of the film itself (some might consider this a mercy); an alternate ending; and a lengthy collection of outtakes.





HCC VERDICT

STX/Sony Pictures - Region B BD

It may look and sound good on Blu-ray, but you'd be much better off watching Heat again...

Movie: Picture: Audio: Extras:



→ BLACK PANTHER

The latest Marvel movie to arrive on 4K Blu-ray gives us our first glimpse of the Black Panther's home world of Wakanda, after the character debuted in *Captain America: Civil War*. A huge hit at the box office, and an equally huge discussion point on social media due to its almost exclusive focus on black characters, it's ultimately a bit hit-and-miss from a simple filmmaking perspective.

It certainly does its job of fleshing out Black Panther's place in the Marvel Cinematic Universe, and it introduces some great new characters — especially the Dora Milaje, Wakanda's army of female warriors. It also delivers one of Marvel's most effective villains to date in Michael B. Jordan's tragic Erik Killmonger, and the narrative covers some surprisingly complicated themes, ranging from black history through to questions of nationhood and global interventionism — all, generally, without being preachy or one-dimensional.

Unfortunately, this combination of a fascinating supporting cast and complex adversary leaves the titular superhero (Chadwick Boseman) feeling a little under-developed at times. It also doesn't help that the movie's action scenes are cumbersome compared with the slickest Marvel films, while some of the VFX work appears particularly flimsy.

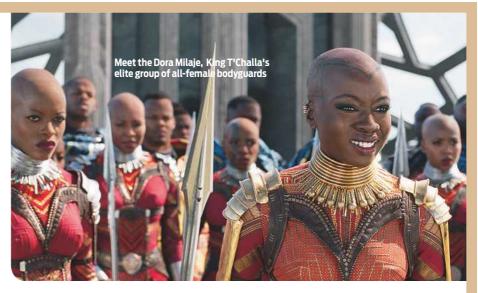
Picture: Black Panther was predominantly shot and finished at 3.4K. While this doesn't quite make it a full 4K experience, it gets closer than most, and this is obvious with much of the 4K Blu-ray picture.

Detail levels are frequently outstanding, pulling out incredible amounts of texture in skin tones, costumes and the film's 'real' (as opposed to CG) backdrops. Digital shooting techniques mean there's no grain either, making it this a distinctly clean and crisp experience.

Well, to a point. A slight problem with *Black Panther*'s visual clarity and purity is that it ruthlessly exposes some of the VFX. Elements such as the war rhinos and some of the Wakandan backdrops don't appear to have been rendered at the same resolution as the live action footage. They therefore look a bit rough and ready by comparison, especially during largescale outdoor shots.

On the plus side, there's some stellar HDR work here. The picture's contrast is immense, with deep





but still fully detailed dark tones at one end of the spectrum, and intense skies and artificial light sources at the other. The high contrast is joined by aggressively expanded colouring, which enhances Wakanda's rich environments, Vibranium-powered weapons and stunning costumes. In this regard the SDR 1080p Blu-ray looks neutered by comparison.

As with Disney's other recent UHD titles, Black Panther is provided in Dolby Vision as well as the standard HDR10 format. The HDR10 master is so good that Dolby Vision's advantages only really come to the fore on a handful of occasions, particularly the contrast-rich Busan car chase. The extra visual quality of these moments more than justifies Disney's Dolby Vision efforts, though. Audio: While Black Panther's 4K imagery might be generally glorious, its audio is not. Not for the first time with a Disney UHD Blu-ray release, it features an exclusive Dolby Atmos soundtrack that sounds strangely compressed. This is especially noticeable at the lower end of the audio spectrum, as the film's many 'impact' moments – charging war rhinos, Vibranium-powered ground punches and so on - just don't land with the floor-shaking impact you'd expect. Treble details, too, seem rather muted and rolled off, and it's a soundmix that'll have you cranking your system louder than you usually would to unlock its potential. Dialogue is never hard to discern, however.

A lack of slam and sizzle is at least countered by Dolby Atmos's traditional sense of immersion. *Black Panther*'s soundscape traverses all the channels in your speaker setup with decent regularity and effectiveness. But decent isn't the same as spectacular; rear/surround detailing sometimes sounds a little under-cooked.

Extras: Black Panther ships with a solid set of extra features, all found on the accompanying Full HD Blu-ray. The most in-depth is a commentary track by director Ryan Coogler and production designer Hannah Beachler, which is patchy but occasionally fascinating. Joining this are around 25 minutes of featurettes exploring the people and customs of Wakanda and its place in the Marvel Cinematic Universe (all are too short to be considered indispensable); four deleted scenes that are worth a shufti; a gag reel; a roundtable discussion about the film's comic book origins; a sneak peek at Ant-Man and The Wasp; and more.





Black Panther's supporting characters outshine its leading man



HCC VERDICT

Black Panthe

→ Walt Disney → Ultra HD Blu-ray & All-region BD → £37

WESAY: A stellar 4K presentation of an enjoyable film, but when will Disney sort out its audio?

Movie: ***

Picture: **

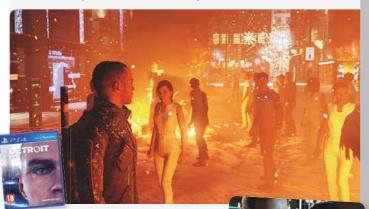
Audio: **

Extras: **

OVERALL: **

Arcade Action

Bigscreen home entertainment isn't just about movies anymore. **Rik Henderson** checks out a videogame vying for time on your home cinema system...



Detroit: Become Human

Sony Interactive Entertainment → PS4 → £50

French game designer David Cage and his development studio Quantic Dream are well known for crafting complex interactive adventures, but *Detroit:* Become Human is truly on another level.

Set in a 2038 version of Detroit, where androids are commonplace and filling many menial jobs, the game serves as commentary on both the rapid rise of

reliance on technology and the history of racial inequality in the US. It doesn't quite handle either subject in as much depth as director Cage presumably hoped, but it does amount to a sci-fi tale that Philip K. Dick or Isaac Asimov would be proud of.

There are multiple playable characters available to you throughout *Detroit...*, much like in Cage's former games *Heavy Rain* and *Beyond: Two Souls*, but one of the main differences this time around is that any of them can die at given junctures. And, if so, they are removed from the plot and you have to carry on without.

Graphically, the game is stunning. The near-future version of Detroit, with its autonomous vehicles, drones and LED-lit street signs, hits the nail on the head in the cross between the capable and soon-to-be. And while it looks amazing in 4K HDR on a PS4 Pro, the standard PS4 version (with HDR, too) is no slouch, thanks to the production team's keen eve for visual detail.

Where the game will divide opinion is in its control method. Quantic Dream games have always been primarily choose-your-own-adventures, with the odd button press, swipe or controller movement deciding on a predetermined course of action. *Detroit...* bolsters this with in-game investigations, which play much like the *Batman: Arkham* games, where you scan for clues and reconstruct the events leading to a murder. Meanwhile, replayability is aided by a flow chart that appears at the end of each chapter and lets you go back to change your decisions at key points.

If you don't fancy sitting through swathes of scenes — albeit superbly animated ones — with only the occasional button press, you're best advised to look elsewhere. For the rest of us, we get a multi-hour experience that grips throughout. It also answers the question of what would happen if you slapped legs on an Amazon Echo — which is frightening and exciting in equal measure.



Grease: 40th Anniversary Edition [4K]

Paramount → Ultra HD Blu-ray & All-region BD → £30



The much-loved musical smash sings louder than ever in this new Ultra HD incarnation.
While both the 1080p and 2160p presentations in this '40th Anniversary' edition

are sourced from a new colour-corrected scan, it's the latter that represents the biggest step forward in quality from previous releases, with Dolby Vision HDR bringing extra vibrancy to the imagery. A rich Dolby TrueHD 5.1 soundtrack (based on a six-track 70mm mix) serves the musical numbers perfectly. A comprehensive set of Blu-ray extras completes the package.



The Life Aquatic with Steve Zissou

The Criterion Collection → Region B BD



Wes Anderson's 2004 comic drama about a washed-up oceanographer (Bill Murray) hunting the rare shark that killed his friend may be a little too scattershot and tonally

uneven to rank among his best films, but the world it creates is one that you'll be happy to stay submerged in for a couple of hours. Fans of the filmmaker who enjoyed Criterion's UK Blu-rays of *Bottle Rocket* and *The Royal Tenenbaums* will be equally pleased with this hi-def platter, which pairs its beautiful 2.40:1 encode (sourced from a 4K scan of the original 35mm negative) with a bounty of archival bonus features.



Fifty Shades Freed

Universal Pictures → All-region BD £25



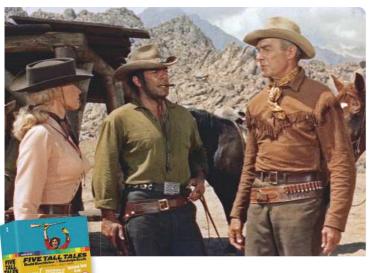
We've got to admit to having a mixed response to this third instalment in the *Fifty Shades...* series. On the one hand, there's the horror of sitting through a truly awful piece of cinema

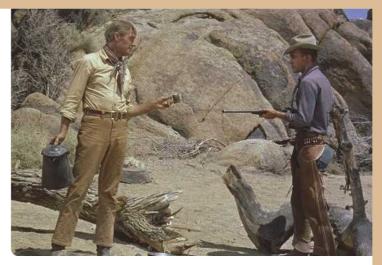
that feels more like one of those depressing TV 'documentaries' about the lives of the insanely rich (only with added rumpy-pumpy). On the other hand, there's the elation that comes from knowing it's the final instalment and you'll never have to sit through any more. As you might expect, it looks sensational on Blu-ray, although the DTS:X mix has very little to work with.











They may be B-movies, but the boxset's five Westerns outclass many of their bigger-budget stablemates





Riding high in the saddle

Indicator does a director-actor partnership proud with its best Blu-ray boxset to date

→ FIVE TALL TALES: BUDD BOETTICHER & RANDOLPH SCOTT AT COLUMBIA, 1957-1960

He may not be a household name in the same way as John Ford or Howard Hawks, but director Budd Boetticher holds a place in the hearts of cowboy picture fans for the seven 'Ranown Cycle' films (named after star Randolph Scott and producer Harry Joe Brown) he made between 1956 and 1960.

While Boetticher and Scott did two of these Western B-movies (1956's Seven Men from Now and 1959's Westbound) for Warner Bros, the others (1957's The Tall T and Decision at Sundown, 1958's Buchanan Rides Alone, 1959's Ride Lonesome and 1960's Comanche Station) were shot for Columbia Pictures — and it's those five that are celebrated by Indicator's superb new Blu-ray boxset.

The films themselves are built around precisely the sort of setups that you'll have seen before any number of times in other medium-scale Westerns (lone men looking for revenge, kidnapped women, 'Indians' on the warpath, etc.). It's the way that Boetticher, Scott and writers Burt Kennedy and Charles Lang take the stories in unexpected and surprising directions that makes them stand out from the crowd. Witness the bitter twist at the heart of Decision at Sundown, the decision to play the family infighting of Buchanan Rides Alone as a grotesque comedy, or the way in which the films frequently mirror Scott's heroes with villainous gunslingers who prove every bit as likeable and charming.

Sadly, stints in prison and an asylum, as well as bouts of ill-health, mean that Boetticher never had the chance to fulfil the promise he showed with the Ranown Cycle. And while this boxset won't make him a household name, it gives the films Boetticher made with Scott a chance to reach a new audience.

Picture: Regardless of whether they are based on older photochemical restorations (*The Tall T*, *Decision at Sundown*, *Buchanan Rides Alone* and *Comanche Station*) or a more recent 2K digital restoration (*Ride Lonesome*), these Blu-ray encodes do the best they can with the material available.

There are issues with occasional source-related halos and — more especially — the additional coarseness that stems from the frequent use of optical dissolves, but for the most part the 1080p imagery exhibits plenty of clean detailing and authentically grainy renderings of the various Technicolor/Columbia Color/Eastman Color palettes. You won't be disappointed.

Audio: The films' rather modest LPCM mono mixes are less obviously striking, but also seem to have been given a thorough clean up. Dialogue, music and Foley effects are all nicely balanced and suffer no distortion or other technical issues.

Extras: As usual, Indicator has packed out its boxset with a wealth of extra features. These range from film-specific content like isolated music and effects tracks, two chat tracks, and appreciations of the films from other directors; to more general goodies such as lengthy audio interviews and video essays. The set also includes a fabulous 80-page book.



The stories may be small, but somehow Boetticher always makes them feel epic



HCC VERDICT

Five Tall Tales: Budd Boetticher & Randolph Scott at Columbia, 1957-1960

→ Indicator → All-region BD → £43 WESAY: A wonderful celebration of an under-appreciated director. Is it too early to say 'boxset of the year'?

Movie:
Picture:
Audio:
Extras:

OVERALL:



You're in for a Whale of a time

Stunning 4K restoration ensures that fans will relish visiting this ... House on Blu-ray

→ THE OLD DARK HOUSE

Driving through Wales en route to Shrewsbury, married couple Philip (Raymond Massey) and Margaret Waverton (Gloria Stuart), and their friend Philip (Melvyn Douglas), are caught out by a storm. As darkness falls, and floods and landslides block their path, the trio take refuge at an old mansion. But as good as it is to be safe from the treacherous weather outside, as the night wears on it becomes apparent that they have even more to worry about when it comes to their hosts: sinister siblings Horace (Ernest Thesiger) and Rebecca Femm (Eva Moore), and their hulking, mute butler Morgan (Boris Karloff).

The travellers at the heart of James Whale's 1932 comic horror aren't the only thing about The Old Dark House to be lost. Given it's fairly poor reception on its original cinema release, it would appear that the film's mix of offbeat chills and acidic humour was wasted on an audience expecting something more straightforward in its shocks, maybe along the lines of Whale's previous box office sensation *Frankenstein* (1931). And then there's the film itself, which was believed lost for a number of years, before filmmaker Curtis Harrington went on a mission to locate and preserve the movie (as documented by one of the extras included on this Blu-ray).

Thank heavens he did, for *The Old Dark House* is a true one-of-a-kind. It's a surprisingly sophisticated piece of filmmaking packed with wickedly impish dialogue ('Something might happen here. But nothing ever happens in Shrewsbury'), and one that strikes a perfect balance between its cheeky laughs and disturbing chills.



Picture: The Old Dark House arrives on Blu-ray courtesy of a spectacular new 4K restoration. Comparisons to Network's old R2 DVD release are like night and day, with Eureka's 1.37:1 1080p transfer exhibiting superior clarity, detailing and stability. Black levels are flawless, as is the contrast, and there's barely a trace of any print damage.

Audio: The LPCM mono audio maintains a low-level hiss throughout, but overall the impression you take away is that the team responsible for restoring the soundtrack have done all they can to ensure this sounds as good as it can.

Extras: A trio of terrific commentaries (featuring critics Kim Newman and Stephen Jones; actress Gloria Stuart; and Whale biographer James Curtis) are joined by a video essay from critic David Cairns (38 minutes); an interview with Sara Karloff about her father (15 minutes) and the aforementioned interview with Curtis Harrington (seven minutes).





HCC VERDICT

Eureka: The Masters of Cinema Region B BD & R2 DVD → £20

A masterful Blu-ray outing for this uniquely funny and sinister piece of vintage Hollywood cinema.

Movie: Picture: Audio: Extras: OVERALL: * * * *

Death Smiles on a Murderer

Arrow Video → Region A/B BD



Before getting caught up making exploitative dross like Erotic Nights of the Living Dead and Porno Holocaust, prolific

Italian director Joe D'Amato (aka Aristide Massaccesi) made his feature debut with this haunting Gothic psychodrama about a mysterious woman and the havoc she wreaks on the wealthy couple who take her in. Arrow's Blu-ray is based on a 2K restoration that captures the film's hazy, dream-like imagery in a 1.85:1 Full HD encode. Extras include an archival interview with D'Amato and a fact-packed chat-track by critic Tim Lucas.



Last House on the **Left: Limited Edition**

Arrow Video → Region B BD



Wes Craven's notorious 1972 nasty (inspired by Bergman's The Virgin Spring) gets the deluxe Blu-ray treatment in

this double-disc set. The centrepiece is a new restoration from a 35mm dune negative (the original 16mm negative having been lost) and while the film still looks as rough as you'd expect, in terms of authenticity to the source material this release can't be beaten. Bonus goodies include the alternate Krug & Company and R-Rated cuts of the film, plus commentaries, archival featurettes. interviews and an isolated score.



The Mad Death: The Complete Miniseries

Simply Media → R2 DVD £15



First aired back in 1983, but rarely seen since then, this threepart BBC Scotland drama about an

outbreak of rabies proved particularly potent nightmare-fuel for a generation of telly addicts. Finally making its debut on DVD, it seems that age has dented its sting somewhat (it's hard not to chuckle at the puppet fox that attacks a car) but it's still definitely worth a look for those keen to revisit it after all these years. It's a shame it hasn't been treated to anything better than a barebones disc with a fairly rough-looking transfer.



The Mountain of the **Cannibal God**

Shameless → Region B BD £15



The Shameless label's fascination with the films of Sergio Martino brings us to the filmmaker's 1978 foray

into the cannibal genre. It's not one of his better efforts, playing out as a dull jungle travelogue for the bulk of its running time, breaking only for scenes of genuine animal cruelty (some of which mercifully remain cut from this UK release), before wheeling on the flesh-munchers for its final act. This 2.35:1 Full HD encode represents a significant step-up in quality on the label's previous Martino discs, and there are a couple of decent extras.



























The action-thriller classic enjoys its 30th birthday with an impactful Ultra HD/HDR upgrade

→ Die Hard: 30th Anniversary

Now celebrating its 30th anniversary, *Die Hard* has lost none of its ability to thrill and entertain. Indeed, the deluge of poor-quality imitators churned out over the last three decades just works to ram home its sense of superiority.

Across the film's 132-minute run time, New York cop John McClane (Bruce Willis) battles an international team of high-tech thieves (led by Alan Rickman's Hans Gruber), saves hostages, saves his marriage and pretty much saves Christmas.

But this is no low-intelligence popcorn flick; John McTiernan's direction, Jan de Bont's cinematography and the brilliantly fat-free script from Jeb Stuart and Steven E. de Souza raise *Die Hard* to the top of the action-thriller class. It has its moments of bombast, sure, but equally it delivers humour, tension and emotion in spades. Happy birthday.

Picture: Fox's 4K HDR re-release for its back-catalogue king is pretty impressive. The original 2.40:1 cinematography carries plenty of fine detail and sharp delineation, although the jump here from its (very solid) 1080p incarnation isn't always scene-stealing, and there are some occasional shots (particularly in the opening scene on the plane) that retain a soft, out-of-focus appearance.

The HDR grading makes much more of an impact. This 4K presentation enjoys a far greater contrast, and highlights abound: the Nakatomi building is awash with bright, fluorescent lighting, reflecting





Bonnie Bedelia (Holly McClane) returns in *Die Hard 2*. Alan Rickman doesn't...

HCC VERDICT

Die Hard: 30th Anniversary

→ Twentieth Century Fox → Ultra HD Blu-ray & Region B BD → £30 WESAY: An excellent 4K upgrade — although this modern classic still deserves a far better set of extras.

Movie:
Picture:
Audio:
Extras:

off construction metals; the lights of the LAPD squad cars pulse a vivid red; fireballs (there are quite a lot of these) threaten to melt your display. At other times, the image's handling of light and dark is quietly beautiful, with the boardroom 'chat' between Hans Gruber and Joseph Takagi an example. Black levels are very deep throughout.

Audio: The opportunity to give this 30-year-old movie a Dolby Atmos or DTS:X sonic overhaul has been spurned, with the familiar DTS-HD MA 5.1 mix that appeared on the 2007 Blu-ray still employed.

Some may consider that a disappointment, even though *Die Hard*'s uncluttered sound design doesn't exactly seem ripe for a re-imagining. The track here is fair, with nice ambient effects, strong dialogue, and some good bass weight when needed. Michael Kamen's gently festive original score remains the highlight, though.

Extras: There are three bonus features on the 4K platter: a chat track from John McTiernan and set designer Jackson De Govia; a scene-specific commentary by VFX supervisor Richard Edlund; and a subtitle-only 'cast and crew' commentary. These have been ported from the previous Blu-ray, and are duplicated here on the 1080p disc, which also adds full-length versions of the film's TV news reports (The Newscasts); a gallery of stills, props and models; and trailers for films including AVP: Alien Vs Predator. This is perhaps where this 4K release falls flat, as a movie that continues to tower above the Hollywood action flick landscape is deserving of something much more definitive for its 30th birthday.

The Dam Busters

StudioCanal → Region B BD



As much a celebration of the good old British tradition of garden shed inventors as it is a war movie, this much-loved

1955 dramatisation of the build-up to and execution of the RAF's Operation Chastise returns to Blu-ray with a 4K restoration. Compared to the 2010 BD, the new 1.37:1-framed 1080p encode exhibits improved density and clarity, as well as eliminating much of the print damage. The DTS-HD MA dual-mono audio needed less work and sounds as good as you could hope for. In addition to the documentary from the previous Blu-ray, this new disc adds plenty of worthwhile goodies.



Suddenly, Last Summer

Indicator → All-region BD



One of the finest pieces of Southern Gothic to ever grace the silver screen, this 1959 film stars Elizabeth Taylor

as an institutionalised young woman haunted by the death of her cousin whose aunt (Katherine Hepburn) wants her lobotomised. Montgomery Clift is the doctor trying to help her. Indicator's Blu-ray brings together a beautifully detailed 4K restoration alongside a wealth of fascinating extras including new and archival interviews; a discussion of the film by French critic Michel Ciment; and an isolated music and effects track.



The Grifters

101 Films Black Label → Region B BD & R2 DVD → £15



Almost a decade on from its less-thenimpressive UK Blu-ray debut, Stephen Frears' unsettlingly Oedipal

neo-noir gets a second shot at hi-def glory. While still a little soft, the AVC 1.78:1 1080p encode is a definite improvement and reveals pleasing detail levels in close-ups. The LPCM 2.0 stereo audio is well balanced, if a little more low-key than some may have liked. While this Black Label platter loses out on the commentary and featurettes that graced previous discs, it makes up for it with an excellent new 72-minute documentary detailing the film's production.



Breakheart Pass

Eureka! → Region B BD & R2 DVD



Based on the novel by Alistair MacLean, this 1975 Wild West thriller finds Charles Bronson trying to find out who

is behind a series of deaths on a train racing through the Rocky Mountains on a top-secret mission. As intriguing as an Agatha Christie-inspired take on the Western may sound on paper, *Breakheart Pass* is only moderately entertaining on film – even genial critic Kim Newman struggles to muster much enthusiasm for it in the interview that serves as the Blu-ray's main extra. Much like the film itself, the AV quality of Eureka's disc is solid rather than spectacular.





Can Aardman score another hit?

Stop-motion specialists try their hand at football with this new prehistoric comedy

→ EARLY MAN

Stone Age battles Bronze Age in this latest stopmotion feature film from Aardman Animation. But, as is typical from director Nick Park (the brains behind *Wallace & Gromit*), this conflict doesn't go the way you might expect. Instead, it plays out as a game of football between a team of underdog cavemen and their more accomplished and flamboyant foreign interlopers.

It only takes one quick look to recognise *Early Man* as an Aardman production. And just like *Chicken Run*, *The Pirates! In an Adventure with Scientists!* and *Wallace & Gromit: The Curse of the Were-Rabbit* before it, the film follows the familiar combination of steadfastly British dry wit and slapstick physicality to generate its laughs.

But what sets *Early Man* apart from its predecessors is how run-of-the-mill it feels at times. Yes, there are still those moments of offbeat brilliance (the giant duck being a particular highlight), but despite the prehistoric setting there's an over-reliance on narrative tropes and setups that are familiar from the countless other sports movies that came before.

Despite all of the guffaws along the way (and there are plenty), *Early Man* lacks the freshness that made previous Aardman films so uniquely entertaining. *Picture: Early Man* arrives on Blu-ray with a sensational AVC 1.85:1 1080p encode. Every single crease and wrinkle in the puppets is rendered immaculately, while the



CG-enhanced backgrounds are crisp and colourful. Only the opening prologue, which was deliberately

digitally 'distressed' to make it look like
a 1960s Ray Harryhausen dinosaur film,
appears anything less than pristine.

Audio: While not in the top tier of Atmos
mixes, Early Man's soundtrack is a pretty
satisfying affair. Surround usage is dynamic
and expansive, while discrete height effects are
used sparingly, but quite effectively (for example:
the asteroid flying overhead in Chapter 1 or the
tree that crashes down in Chapter 3). Dialogue
and music are handled flawlessly.

Extras: Despite some repetition, the disc's seven Making of... featurettes provide a good overview of the production. A commentary featuring Nick Park and editor Sim Evans-Jones provides even more behind-the-scenes info, plus plenty more laughs.





HCC VERDICT

Early Man

→ StudioCanal → Region B BD

→£23

WESAY: Hardly the most inspired of Aardman's films, but still a winner when it comes to scoring with gags.

New Zealand's new wave

Three movies that shook up an entire film industry make their UK Blu-ray debut







→ SLEEPING DOGS/SMASH PALACE/THE QUIET EARTH

1977 was a pivotal year for New Zealand's moribund film industry. Following the release of Gaston Méliès' Hinemoa in 1913, local film production had been almost entirely dominated by documentaries and short films. Yet that all changed in 1977 with the success of director Roger 'Species' Donaldson's feature debut Sleeping Dogs, which would quickly kick-start a new era in filmmaking in the country. And, with the New Zealand Film Commission having recently become more accommodating to licensing enquiries, Arrow has swooped in and is bringing some of the best of these flicks to Blu-ray in the UK.

Sensibly enough, Arrow chose to kick its releases off with Sleeping Dogs. Inspired by the genre-bending American cinema of the '70s and starring Sam Neill in his first major role, this dystopian thriller serves up a heady brew of government oppression, Kafkaesque bureaucracy and freedom fighting.

Donaldson followed Sleeping Dogs with 1981's Smash Palace, a punishing domestic drama that charts the breakdown of the relationship between a former racing driver (Bruno Lawrence), who now runs a wrecking yard, and his French wife (Anna Jemison), with their young daughter stuck in the middle. Think Kramer vs. Kramer with more Kiwi accents, car racing and kidnapping at gun-point and you won't be too far off the mark.

Bruno Lawrence is front and centre once again in Geoffrey 'Young Guns

II' Murphy's The Quiet Earth (1985), a post-apocalyptic thriller which the actor also co-wrote. This time around he gives a tour-de-force performance as a scientist who wakes up one day and discovers that he may well be the last person left alive on Earth. Surprising, stimulating and engrossing, it may not have been the first last-man-on-earth movie. but it is one of the very best.

Together these three films provide a fascinating window into







It's the end of the world as we know it in The Quiet Earth (top), while Sleeping Dogs (above) helped create a brand-new one for New Zealand's filmmakers

the development of the New Zealand cinema industry, and leaves us excited at the prospect of what other gems Arrow will unearth – even if a new restoration of Peter Jackson's Bad Taste (1987) is probably too much to hope for.

Picture: This trio of Arrow Blu-rays shares a fairly homogenous quality when it comes to their 1.85:1-framed 1080p encodes - which is no bad thing. While actual information about the origins of the HD masters are thin on the ground (details go no further than each being 'remastered in HD from the original film elements'), and there are occasional traces of minor age-related wear and tear, the overall impression across the board is one of warm colours, good detailing and reasonable grain retention. **Audio:** All three films offer a choice of restored LPCM dual-mono tracks and DTS-HD MA 5.1 remixes. The latter are naturally limited somewhat by the source material, but still manage to convincingly open up the front LCR soundstage, while also introducing some subtle ambient effects in the surrounds. **Extras:** Sleeping Dogs scores a commentary from Roger Donaldson, Sam Neill and writer/actor Ian Mune, a pair of excellent Making of... documentaries, and the trailer. Meanwhile, Smash Palace is joined by

Finally. *The Ouiet Earth* offers up a commentary from critic Travis Crawford, a discussion of the film's literary and cinematic forebears, a fascinating video essay, an image gallery and trailer.

a chat-track from Donaldson and stunt driver Steve

Millen, an hour-long Making of... and trailer.

HCC VERDICT

Arrow Academy Region A/B BD

A solid Blu-ray package for a pivotal film in the development of New Zealand's film industry

Movie: Picture: Audio: Extras: OVERALL: ★ ★ ★ ★

HCC VERDICT

Arrow Academy - Region A/B BD

Marriage breakdown meets masculinity in crisis in this unusual domestic drama. Worth a look

Movie: Picture: Audio: Extras: OVERALL: ★★★★

HCC VERDICT

The Oviet Earth

Arrow Video Region B BD

A good-looking UK Blu-ray debut for this post-apocalyptic Antipodean cult classic

Movie: Picture: Audio: Extras: OVERALL: ★ ★ ★ ★

Cure

Eureka! The Masters of Cinema Series → Region B BD & R2 DVD → £18



Frequently cited as the film that kickstarted the J-horror phenomenon, Kiyoshi Kurosawa's 1997 chiller *Cure* eschews the

supernatural trappings that would come to define the cycle and instead plays out as a low-key crime drama centred around a series of seemingly inexplicable murders. Kurosawa's disturbing masterpiece makes its (long-overdue) UK disc debut with a intentionally dark 1.85:11080p encode whose foreboding shadows potentially hide all sorts of horrors, and an ominous, bass-rich DTS-HD MA 5.1 mix. Rewarding extras include two interviews with the director and an exclusive booklet.



The Bloodthirsty Trilogy

Arrow Video → Region B BD



While hardly classics in their own right, director Michio Yamamoto's trio of '70s fright films (*The Vampire Doll*,

Lake of Dracula and Evil of Dracula) are primarily notable for drawing inspiration from Hammer's vampire movies, rather than local folklore. Spread across two discs, the three modestly entertaining flicks sport restored, organically film-like 2.35:1 Full HD presentations accompanied by clean, if not especially dynamic, LPCM mono Japanese audio. Pick of the (fairly limited) extras is an appreciation by critic Kim Newman.



Youth: Medal of Courage

Cine Asia → Region B BD & R2 DVD



Xiaogang Feng's wartime drama follows the travails of the members of a military arts troupe in the

People's Liberation Army during the 1970s. While borrowing a little too heavily from Hollywood coming-of-ages stories at times, *Youth...* opens the doors to a fascinating world that many Westerners will not be familiar with. For the most part it also makes for a superb watch on Blu-ray, thanks to its detailed 2.40:1 encode and forceful DTS-HD MA 5.1 mix. It's just a shame about the stuttering that affects several panning shorts.



Birth of the Dragon

Altitude → All-region BD



A heavily fictionalised account of the fight between Bruce Lee and Wong Jack Man, Birth of the Dragon

takes the intriguing approach of painting Lee (Philip Ng) as a bit of a bully and instead makes Man (Xia Yu) the more sympathetic character. This otherwise entertaining US production feels the need to foist a dull American character into the heart of plot; thankfully the wonderful fight scenes (co-ordinated by Cory Yuen) ensure that it's worth persevering with. While this Blu-ray packs quite a punch in the AV stakes, there's only one short extra.





Can hero get Bat to the future?

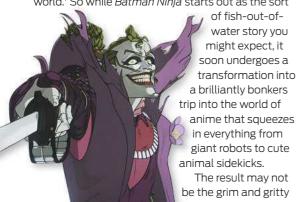
A trip back in time to feudal Japan does wonders for Batman and his rogues gallery

→ Batman Ninja

The 'Elseworlds' concept will be familiar to fans of DC Comics. It allows writers to re-imagine popular characters such as Batman and Superman in new guises and new settings. Only a few months ago we saw an animated adaptation of the very first of these comics, *Batman: Gotham by Gaslight*, which saw a Victorian version of the Dark Knight going up against Jack the Ripper.

While it doesn't quite follow the same rules (it's actually a time-travel story), *Batman Ninja* fits comfortably into the same bracket. Written, designed and directed by several big names from the world of anime, the film sees Batman, several of his chums and a big bunch of villains get zapped back to feudal Japan.

However, as director Jumpei Mizusaki puts it: 'We aren't entering the Batman world as a guest. Rather, we're inviting Batman as a guest into our world.' So while *Batman Ninja* starts out as the sort





take on Batman that some fans favour, but the astonishing art design, insane action and unbridled creativity make it among the most purely enjoyable Batman films we've ever seen. More please.

Picture: Batman Ninja is, without doubt, the best-looking DC animated movie. From the vibrant palette to the crisp delineation, smooth motion to lack of technical issues, the Blu-ray's 1.78:1 Full encode is absolutely rock-solid from start to finish.

Audio: The DTS-HD MA 5.1 English dub boasts a strong low-end, plenty of surround activity and nicely prioritised dialogue. The only real negative is that the film's original Japanese language track has for some reason been classed as a 'Special Feature', and is only presented as a lossy Dolby Digital 5.1 mix. **Extras:** In addition to the audio track mentioned above, the Blu-ray includes two excellent featurettes exploring the making of the film, plus a New York

Comic Con Q&A with the filmmakers.





HCC VERDICT

Batman Ninja

→ Warner Bros. → All-region BD

→ £17

WESAY: The most unpredictable and enjoyable Batman film in years on a great-looking hi-def platter.

Movie: ***

Picture: **

Audio: **

Extras: **

OVERALL: **



There's an outbreak in the Outback...

... but there's still plenty of time to slip some brains on the barbie

→ CARGO

It's tempting to describe *Cargo* as a cross between *Day of the Dead* and *Walkabout*, but that would infer a level of carefree jollity to this cautionary post-apocalyptic tale that just isn't there. An Australian survival horror, extrapolated from a viral short film of the same name which broke in 2013 (see p16), *Cargo* stars Martin Freeman as Andy, a father attempting to keep his family safe after the outbreak of a zombie pandemic. Co-directors Ben Howling and Yolanda Ramke unfold their story with grim stoicism.

When we first meet Freeman, he's safe from harm's way on a houseboat, but an ill-fated search for food in an abandoned boat (didn't these guys ever watch Fulci's *Zombie Flesh Eaters*?) puts an end to his family's idyllic cruise. Soon it's just him and infant Rosie searching for sanctuary.

Andy first encounters Thoomi, a young Aboriginal girl who is protecting her infected father from the rest of her tribe who are (sensibly) intent on cleansing house; and then the hideously abusive Vic, who captures indigenous locals to use as human bait to literally mug the undead.

While the movie treads a well-worn path, there are things here you won't have seen before. When victims turn, they ooze a sticky gloop from their orifices which is both revolting and memorable. When bitten, the unfortunate also wear a countdown watch that tells them how long they've got before things get really goo-some. *Cargo*'s zombies also like to dig holes and stick their heads in the sand, or gather in dark spaces as if hibernating. So while this is short on laughs, it packs some neat ideas.



Picture: Presented in a 'Scope aspect ratio and regular HD (there's no 4K or HDR option), this Netflix Original is clearly a low-budget production. That said, the image is detailed and cinematic, and the expert lensing of cinematographer Geoffrey Simpson, with suitably dusty colour grading, brings home the expanse and dry desolation of the Outback scenery. Most of the action takes place in bright sunlight, which in itself is somewhat novel given the genre. **Audio:** Cargo's soundmix is conventional Dolby Digital 5.1, and this is a dialogue-led movie offering little in the way of audio histrionics. There's not a lot of overt image placement in the surrounds, and the electronic score ebbs and flows with rueful monotony; your subwoofer will probably fall asleep guite early on. This isn't a criticism, merely an acknowledgement of the low-key sound design. Ultimately there's an intimacy to this mix that emphasises the small-scale drama.





HCC VERDICT

Cargo → Netflix

WESAY: This character-driven Aussie fright flick breathes some new life into the zombie movie.

Movie: ***

Picture: **

Audio: **

OVERALL: **





Amanda Seyfried plays the femme fatale in Andrew Niccol's sci-fi neo-noir

→ Anon

→ Sky Cinema

This largely incomprehensible augmented reality sci-fi procedural from writer/director Andrew (*Gattaca*, *Lord of War*) Niccol is the second simultaneous cinema/satellite release from Sky Cinema. Outside of the UK, it plays on Netflix.

Clive Owen is detective Sal Frieland, a cop with AR (Augmented Reality) eyeballs. Everyone he looks at appears with an overlay that tells him who they are and what they do. This info overload extends to buildings, furniture and food. It isn't a specific skill.

As it happens, everyone in *Anon* has an electronic implant. The world, thus viewed, is awash with AR advertising hoardings and messaging. When Sal is called in to solve a murder, he can even see the victim's point-of-view. Then he realises that the murderer can hack this data feed, and therefore has no digital footprint...

The concept, clearly meant as a cautionary tale about eroding privacy and our surveillance culture,

is visually audacious, but the execution is brutally dull. Much of the film involves people standing around exchanging mind files. Murders are seen first-person-shooter style, on repeat. The action largely involves Clive Owen frowning.

There's also some gratuitous sex, because, well why not? It apparently has something to do with capturing the killer. *Anon* tries to be cerebral but just comes off as silly. You'd be much better off using the time to re-watch a couple of episodes of Charlie Brooker's *Black Mirror*.

Perhaps the only reason to check out *Anon* is the work of director of photography Amir Mokri, which is almost exclusively monochrome – the set design and costumes are black, white and grey, and achingly stylish. Sky's 4K presentation adds fabulous detail. The soundtrack, which is a Dolby Digital 5.1 mix, is fittingly sterile.



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Collecting...

Bruce Willis

To mark the 4K Blu-ray debut of *Die Hard*, *Team HCC* rounds up 10 other Bruce Willis movies that deserve a place in everyone's disc collection...

SIN CITY

Co-directed by Robert Rodriguez and Frank Miller (with an assist from Quentin Tarantino), this 2005 portmanteau thriller adapts three of Miller's noir-pastiche Sin City comic book miniseries for the bigscreen. Willis takes centre stage in That Yellow Bastard, playing an aging cop who saves a young girl from the paedophile son of a local senator, gets banged up in jail for his trouble, and is released eight years later only to discover that certain people still want the girl he saved (now an exotic dancer, played by Jessica Alba) bumped off. Stylish and thrilling, Sin City is a superb cinematic take on the source material - just don't bother with the disappointing 3D sequel.

Get it: Disney's dazzling two-disc Blu-ray looks spectacular and packs in plenty of extras, including extended versions of the stories.





DEATH BECOMES HER

Willis joins Meryl Streep and Goldie Hawn in this effects-heavy 1992 black comedy from Robert Zemeckis about two rivals who drink a potion promising eternal youth, only to endure some rather unpleasant side effects...

Get it: Fans get to choose from US, UK, Australian, German and French Blu-rays – all evidently based on the same, rather dated, HD master. The Region A-locked US disc adds a DTS-HD MA 5.1 mix to the lossless 2.0 soundtrack found elsewhere.



THE LAST BOY SCOUT

Written by Shane Black and directed by Tony Scott, 1992's *The Last Boy Scout* is a film that seems to be criminally underrated. Wildly funny and blessed with some energetic set-pieces, it's best described as a snappier, more on-edge version of *Lethal Weapon*. Check it out.

Get it: Seemingly only given a double-pack release with *Last Man Standing* in the US, at least UK buyers get to pick this up on its own for less than £10. No extras, though.



12 Monkeys

Based on the experimental 1962 French short *La Jetée*, director Terry Gilliam's 1995 sci-fi noir finds Willis playing a man sent back in time from 2035 to 1990 to prevent the release of a virus that will wipe out almost the entire human race. Well, either that or he's very confused.

Get it: While the 2009 Universal Pictures Blu-ray is perfectly good (and even includes a commentary from Gilliam among its extras), Arrow Video recently teased that it's at work on a new Blu-ray for release later this year.



PULP FICTION

Quentin Tarantino's 1994 crime ensemble is famed as saving the career of John Travolta. It didn't quite do the same for Willis, but certainly raised his profile after a few hit-and-miss efforts.

A brilliant movie, with Willis excelling in the second act story.

Get it: Pulp Fiction freaks will want the 2014 20th Anniversary Deluxe boxset, which packs art cards, a Big Kahuna Burger Bag and other goodies. However, as this is now hard to find, they can make do with the rather brilliant 2011 standard BD release.



Unbreakable

For his 2000 sophomore flick, M. Night Shyamalan re-teamed with his *Sixth Sense* star for a naturalistic-feeling superhero origin movie — and one with another neat twist ending. Willis is a great choice for the role of 'unbreakable' David Dunn, a man coming to terms with his unusual powers. Look out for *Glass* in 2019 for another slice of the saga.

Get it: Unbreakable is not old enough to have yet benefitted from a superior back-catalogue re-release, so the current BD edition with standard-def extras and somewhat muted image quality is your best option.



Moonrise Kingdom

Willis puts his talent for deadpan humour to excellent use in this typically quirky 2012 flick from Wes Anderson, playing the small but pivotal part of a police captain leading the search for two 12-year-olds who have fallen in love and run away.

Get it: As with all of Anderson's films, the best version is the Criterion Collection Blu-ray. But unlike some of his other features, this one has yet to join Criterion's UK range, so you'll have to import the Region A-locked US incarnation instead.



Die Hard 2: Die Harder

The first sequel, released in 1990, to the action classic sticks close to the original's template, which is fine by us. Yes, *Die Hard 2* can't match its predecessor (it lacks an A-grade villain, for a start) but it's a solid actioner nevertheless. Renny Harlin fills the shoes of departed director John McTiernan, but doesn't struggle to create some superior set-pieces, including a final fist-fight on the wing of an aeroplane.

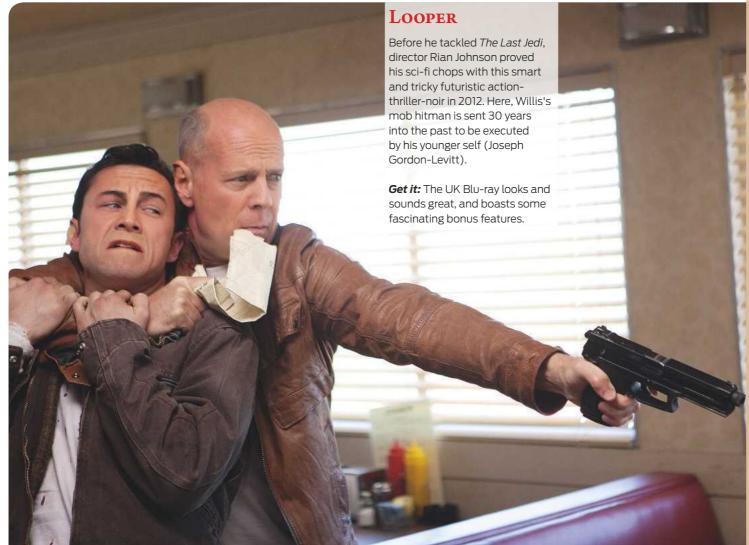
Get it: No 4K release yet, which is a shame as the existing BD could be better. A good chat track from Harlin is the pick of the extras.



The Fifth Element

Luc Besson's weird and wonderful 1997 sci-fi featuring Milla Jovovich as an extraterrestrial 'weapon' gives Willis a chance to turn on his charisma as ex-solider-turned-minicab driver Korben Dallas. And he easily holds his own against increasingly outlandish turns by Gary Oldman and Chris Tucker.

Get it: For those with compatible systems, Sony Pictures' 4K release (available in the US) is obviously the version to get. Note that its Dolby Atmos audio also featured on a previous 'Mastered in 4K' 1080p outing.



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TOP 15 Televisions



TOP 5 Blu-ray movies



Jumanji: Welcome to the Jungle

Enjoyable reboot/sequel to the '90s family flick, with Dwayne Johnson leading the cast. A reference-grade 1080p image is joined by active DTS-HD MA sonics – but no Atmos. HCC #285



Star Wars: The Last Jedi [Ultra HD Blu-ray]

Rian Johnson delivers another slice of sci-fi spectacular that sees the franchise move in an unexpected new direction. The 4K platter marries Dolby Atmos with Dolby Vision. HCC #285



The Greatest Showman [Ultra HD Blu-ray]

Roll up! Roll up! Hugh Jackman leads the cast of this rousing musical based on the life of circus master P.T. Barnum. Superb AV presentation and fun extras. HCC #286



Blade of the Immortal

The latest film from prolific Japanese director Miike Takashi is a riveting Samurai actioner bookended by audacious fight scenes. Arrow's BD offers solid AV quality and a real wealth of bonus bits. HCC #285



The Commuter

Another team up between Liam Neeson and director Jaume Collet-Serra, another Hitchcockian slice of B-movie entertainment. This looks and sounds good on BD, but the extras are pitiful. HCC #286















Sony KD-65ZD9→£3,000 ★★★★

Full-array LED TV (with advanced local dimming tech) that claims a 1,800-nit peak brightness and DV support. Cinematic, sublime pictures – the 100in version [HCC #282] is even more impressive. HCC #267

Samsung QE55Q9FN→£2,800 ★★★★★

Save a chunk of money by shopping for Samsung's flagship QLED TV at 55in size. Again, the 4K HDR performance here is superb, with efficient light control, excellent native brightness and rich, wide colour. HCC #286



Sony KD-55A1→£2,800 ★★★★

Another Sony set due a Dolby Vision upgrade, this 55in OLED dazzles with its image quality (including superb motion processing), hidden Acoustic Surface speaker technology and eye-catching styling. HCC #275



LG OLED65E7

→£3,800 ★★★★
3D playback is dropped, but the E7 offers welcome picture improvements over last year's E6, particularly brightness and near-black talents. Supports Dolby Vision.



Panasonic TX-55EZ952

→£2,000 ★★★★
A 55in OLED TV with an effortlessly naturalistic performance, although not as bright as some rivals.
Gorgeous, understated design and premium build quality.

HCC #277



Sony KD-55XF9005

→£1,700 ★★★★ Impressive backlighting, dynamic HDR images and top-quality motion processing are the major draws of this mid-tier Bravia. Android OS still needs improvement, though. HCC #285



Philips 55POS9002

→£2,000 ★★★★

Philips' second-gen Androidpowered OLED takes a more
refined approach to its
processing, focusing on
balanced cinematic imagery.

Ambilight, as usual, boosts
your immersion.

HCC #276



Samsung UE49MU7000

→£750 ★★★★
Not one of Samsung's top-flight TVs, but a cracking mid-range 49in model that presents 4K and HD material with bright, rich colours and stable blacks. Good choice for an affordable setup.



Panasonic TX-65EX750

→£1,500 ★★★★
A (surprise!) 3D-capable
LED screen that offers
well-controlled backlighting,
pleasing 4K clarity and good
HD upscaling. Not the
brightest around, and some
colour inconsistencies.
HCC #279



Loewe Bild 3.55

→£2,800 ★★★★
Loewe's entry-level 55in
OLED TV offers an artful
fusion of design and
performance (with decent
sonics). Not the best
selection of integrated
smarts, though, and some
rivals are cheaper. HCC #283



Sony KD-55XE8596

→£900 **★★★★**

A real 4K bargain, combining a 55in screen with a solid picture performance. HDR doesn't zing due to a lack of sheer brightness, but it benefits from backlight stability. Impressive with regular HD, too. HCC #278



LG 55SJ850V

→£900 ********

Backlight distractions hinder this set's performance in low-lit rooms, but it's a strong all-rounder, offering Dolby Vision HDR, WebOS smarts, well-rounded sonics and a bargain price tag. HCC #276



Hisense H65N6800

→£1,100 **★★★**★

This 4K display isn't without its flaws, especially when it comes to core black level response and HDR finesse. But its screen size (65in), price tag and specification will find it fans. HCC #278



Hitachi 75HL16T64U

→£1,350 **★★★**★

This 75in megascreen offers a lot of 4K image for not a lot of money. Predictably, picture quality can't match that of big-brand rivals – but the TV holds appeal if you're mainly after an SDR display.

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Wharfedale DX-2 →£450 ★★★★

The asking price of this 5.1 system will tell you it doesn't offer the last word in surround sound fidelity, but Wharfedale's package is compact, well made and faultlessly delivers on its home-cinema-on-a-budget promise. HCC #283





Monitor Audio Gold 300AV →£7,150 ★★★★★

MA revamped its Gold Series and we paid serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. HCC #251



KEF Q Series 5.1.2 →£3,300 ★★★★

KEF's revamped Q Series now offers Atmos modules for an up-to-the-minute sonic experience. Big, boldlooking speakers. Robust, immersive audio. HCC #280



KEF R Series 7.1

→£6,500 ★★★★
A 7.1 set mixing dipolar and direct surrounds, this package takes its cues from KEF's Blade and offers faultless, largescale home cinema sonics. HCC #217



ATC HTS7 5.1

→£3,500 ★★★★
Brit brand ATC rejigs the driver tech and neutral sound of its SCM range into a wall-mountable, flexible system perfect for discreet AV setups. HCC #275



ELAC Debut 5.1.2

→£1,950 ★★★★
Well-priced floorstanding
Atmos system that manages
to balance subtlety and
precision with an exciting
delivery. Subwoofer includes
app-based room EQ. HCC #262



Monitor Audio Silver 500 5.1 →£3,650 ★★★★★

The new Silver range offers a potent EQ-able sub, sweet design, dipole surrounds and largescale, nuanced sonics. Atmos upfiring models would be nice, though. *HCC* #282



Acoustic Energy 100 Series 5.1 →£1,300 ★★★★

Acoustic Energy's latest addition scores well on style, ease of install and price, and puts in a consistently entertaining multichannel performance. HCC #286



Wharfedale Diamond 11 HCP→£800 ★★★★

Bookshelf speakers and 10in sub combine in a system that offers mid-range and treble finesse and a healthy dollop of boisterous bass. Fun and affordable. HCC #279



Q Acoustics 7000i 5.1 Slim→£1,000 ★★★★★

Consistent tonality and detail retrieval are the standout elements here, joined by a cute, easy-to-accommodate design – particularly the 7060S sub. HCC #284



Focal Sib Evo Dolby Atmos

5.1.2 →£1,200 ★★★★ Enjoyable-sounding and well-priced sub/sat system with Atmos upfirers in front L/R enclosures. Not the smallest 'satellite' speakers around. HCC #276



Polk Signature Series 5.1 →£1,450 ★★★★

Largescale performance from a well-priced floorstanding system with slimmed-down centre enclosure. Upfront and boisterous sound; a great entertainer. HCC #273



DALI Opticon 5.1 →£3,200 ★★★★

The Opticons employ driver designs from DALI's high-end models, and showcase a talent for involving music presentation and thrilling home cinema. HCC #260



Piega TMicro 5.1 →£4,000 ★★★★

An expensive but classy package for those seeking high style in their home cinema, with a focus on clear, smooth and cohesive sonics. HCC #283

TOP 10 Projectors



Sony VPL-VW760ES→£15,000 ★★★★★

This premium beamer adds laser illumination to Sony's 4K SXRD projection technology, and the results are staggering. It's not super-bright, but images are detailed, vivid and supremely well-balanced. Worthy of flagship status. HCC #283



JVC DLA-X5900 →£4,000 ★★★★★

An outstanding performer at this price point. JVC's latest D-ILA model may lack native 4K silicon but its eShift 4K engine shows real improvement and HDR playback has been greatly boosted too. A compelling home cinema PJ. HCC #282



Sony VPL-VW360ES→£7,000 ★★★★

In Sony's 4K range between the laser-based VW760ES and entry-level 260ES you'll find this accomplished beamer. Excellent imagery with both SDR and HDR. Motorised controls.



Vivitek HK2288

→£2,500 **★★★★**

The Taiwanese brand returns to the UK with a 4K DLP PJ that balances impressive HDR brightness with stable images. Excellent remote control and decent zoom and throw options. HCC #285



Optoma UHZ65

→£5,000 **★★★★**

The asking price here reflects Optoma's addition of laser illumination (yielding improved contrast and far greater 'lamp' life) to the DLP 4K and HDR playback talents of its stablemates.



Optoma UHD40

→£1,300 ★★★★

A great asking price for this 4K DLP model that offers enough setup flexibility (1.2x zoom, vertical lens shift) and HDR brightness to make it stand out from the budget competition.



Acer VL7860

→£3,500 **★★★**★

Laser 4K DLP projector that misses out on the contrast performance of some models, but undercuts them in terms of pricing. Use the Silent mode for whisperquiet operation. HCC #284



Sony VPL-VW260ES

→£5,200 ★★★★

Sony's base-level 4K PJ comes with a few strings attached (brightness and colour range are limited), but it's a tempter for anyone speccing a UHD theatre. HCC #280



Epson EH-TW7300

→£2,200 ★★★★

Similar performance traits to its bigger EH-TW9300 sibling, but with reductions in max brightness (and claimed contrast). 4K upscaler, rather than native, with HDR playback. HCC #269



BenO W1050

→£500 **★★★★**★

There are a few cut corners on this budget DLP 1080p model (no backlight on the remote, no lens shift, a meagre zoom), but overall movie performance is good for the money.

HCC #283

Award-winning home cinemas

At Cyberhomes our home cinemas and smart home installations aren't just about the amazing 4K picture and immersive Dolby Atmos® sound. We also implement the acoustic treatments, lighting control, seating, ISF calibration, the intuitive Savant Pro or Control4 control system, and so much more.







CEDIA MEMBER



Home cinema design and installation • Lighting control systems Multi-room audio and video • Home automation

TOP 10 Blu-rays













Oppo debuted 4K with a superb universal design including Dolby Vision HDR. Packed with user adjustments and connectivity. No apps or Darbee processing, and the brand has now withdrawn from the BD market. HCC #269



Sony UBP-X800 →£270 ★★★★★

HCC #274

Sony embraces UHD Blu-rav with a full-width, sturdy design that'll also spin DVD-A and SACD platters. A great all-rounder, but no current Dolby Vision support or word on an update.



Panasonic DMP-UB900

The Ultra HD Blu-ray format got an inspiring debut in Panasonic's multi-talented deck that offers a sterling picture performance, 4K-enabled VOD apps and analogue audio outs. No DV. HCC #259



Sony UBP-X700 →£250 **★★★★**

A compact player promised a DV update this Summer, the UBP-X700 has a nondescript design, no analogue outs and a stubby remote. But it plays great, and offers SACD support. HCC #284



Cambridge Audio CXUHD

The lack of analogue outputs is a surprise considering CA's heritage, but this universal (and DV-capable) deck sounds sweet over its digital outs. As with Oppo's UDP-203, a MediaTek SoC is used. HCC #279



Panasonic DMP-UB700

→£300 ★★★ Shorn of some of the audiophile niceties of the UB900 (including multichannel analogue outputs), but still a safe pair of hands with your 4K BDs. And at a bargain price. HCC #270





Panasonic DMP-UB300

→£130 ★★★★★

Great 4K imagery from this bargain deck, but you might prefer to up your budget for the UB700 – no split HDMI, optical/coaxial or Wi-Fi connections here. Half-size design for an easy install. HCC #272



Samsung UBD-K8500

→£180 ★★★

Debut Ultra HD Blu-ray player that finds fans courtesy of its sensible price point (now even lower), connected smarts and eye-catching visuals. Build quality is a little uninspiring. HCC #260



Samsung UBD-M9500

→£230 ★★★★

Second-gen 4K player that adds features (mobile BD streaming, 360-degree image support) but removes 3D playback cápability. As before, the chassis is curved. UHD discs look pin-sharp. HCC #275

Starscape Fibre Optic Lighting

CEDIA MEMBER

- * Infinity modular star ceiling panels for professional installers
- * Custom and off-the-shelf DIY fibre optic kits
- * Room accent lighting from a single light source
- * Comprehensive website with projects and ideas.

Help and advice from our small team of fibre optic enthusiasts info@starscape.co.uk www.starscape.co.uk 01289 332900



Photo courtesy of Gary J.Fernandez

TOP 10 AV Receivers/AV Processors





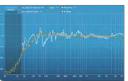


Denon AVR-X6400H → £2,100 ★★★★

This receiver's 11 channels of power are joined by Atmos, DTS:X and integrated Auro-3D, plus HEOS multiroom integration, making it peerlessly flexible. Sound delivery is quick-footed and articulate. A superb one-box solution. HCC #280







Arcam AVR850→£4,500 ★★★★★

High-end seven-channel AVR marrying Class G amplification and Atmos (and future DTS:X) support with talented Dirac Live Room EQ. 11-channel pre-outs for full-fat setups.



Denon AVC-X8500H→£3,300 ★★★★

For those want to go even bigger with their Atmos/DTS:X system, this flagship provides 13 channels of power. Setup can be complex, and there's no FM tuner, but otherwise this is first-class. HCC #285



Marantz NR1608

→£600 ****

With a smoother sound signature than before and the addition of HEOS multiroom, Marantz's 7.1-channel slim-line AVR flies the flag for living-room friendly AV. Only one HDMI out, though. HCC #278



Sony STR-DN1080 →£550 ★★★★

Sony is back in the AVR game with a first Atmos model that adds worthy phantom rear speaker processing to its 5.1.2 sonics. A few UI niggles don't

sonics. A few UI niggles don't take much of the shine off an impressive budget buy.

HCC #277



Marantz SR8012

→£2,700 ★★★★

Marantz joins the 11-channel arms race with an AVR that benefits from a beefed-up power stage. As with the Denon X6400H, format support includes Auro-3D. Sophisticated sonics.



NAD T 777 V3

→£2,500 ★★★★★

Dirac-enabled seven-channel AV receiver (with 11-channel processing). Powerful, even-handed sonics and wonderfully easy to use, but a firmware update is still awaited for DTS:X decoding. HCC #285



Yamaha RX-A3070

→£1,600 **★★★★**★

Currently Yamaha's most potent receiver, this nine-channel model is packed with features and performs solidly, but a GUI/remote control upgrade would be welcome. HCC #286



Yamaha RX-A860

→£900 ★★★★

Only seven channels and hindered by only three HDCP 2.2-enabled HDMI inputs, but beyond that this flexible MusicCast AVR proves a great listen, with plenty of DSP toys.



Denon HEOS AVR

→£800 ****

Able to run wireless rears/ sub (using HEOS models) and sporting a display-free design, this is a five-channel AVR with a different approach. One for HEOS devotees only. HCC #276

TOP 5 Bonus features



mother! The Downward Spiral

Darren Aronofsky's off-beat psychological chiller isn't for everyone, but this doc provides fascinating insight into the film's conception, planning and 16mm capture. HCC #282



Kingsman: Inside the Golden Circle

A near two-hour doc, split into nine parts, is perhaps more than this hit-n-miss sequel deserves, but there's plenty of info and insight here into K2's production. HCC #283



Thor Ragnarok: Director's Commentary

Taika Waititi delivers an oddball, frequently hilarious chat track that fits this movie's anarchic nature well. A fine solo effort, albeit with an unexpected guest star... HCC #284



The Director and the Jedi

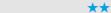
This 95-minute Making of... documentary is the must-see extra on The Last Jedi's BD. More than just a typical overview of the film's production, this is skilfully edited and utterly absorbing. HCC #285



You Must Remember This: The Warner Bros. Story

The 480i image isn't great, but this 289-minute film charting WB's rise to the top of Hollywood is a brilliant addition to the Casablanca: Premium Collection BD. HCC #284





TOP 10 Subwoofers





SVS SB-2000 →£800 ***

This follow up to the SB-1000 offers immense value for money. A mid-sized woofer that imbues Blu-rays with quick, taut and potent LFE, it's a perfect introduction to what a truly good sub can accomplish. HCC #233





REL No.25→£6,500 ★★★★★

REL celebrates its 25th anniversary in style with this 15in/1,000W premium concoction that exhibits exhilarating speed and nuance down to serious depths. Big, but beautiful. HCC #271



Bowers & Wilkins DB1D

→£3,750 ★★★★★

This sequel to the DB1 moves EQ to an app and changes driver/amp design. Beautifully controlled performance with depth and detail. Gorgeous bodywork. HCC #277



JL Audio Fathom f212v2

→£6,500 ★★★★
A second outing for JL's 2 x
12in monster, with an increase
in power (3,600W) and room
EQ improvements among the
changes. Sounds as good as
you'd imagine. HCC #261



SVS SB16-Ultra

→£2,500 ★★★★

A 16in driver and 1,500W amp combine to give SVS's flagship sealed sub real appeal. Goes low but remains tight and fast. App-assisted EQ and operation. HCC #270



REL HT/1003

→£500 **★★★★**

REL targets film fans with a 10in sub that drops its usual simultaneous high/low-level input to hit a new price point. Power and speed are its strengths. HCC #286



REL T7i

→£850 ****

Easy to house 8in sub (with 10in passive driver). Decent LF extension joined by superb speed. Wireless transmission via optional (£200) system. HCC #277



SVS SB-4000

→£1,800 ★★★★

Similar in operation and styling to the SB16-Ultra flagship, but smaller and more affordable. Superior DSP results in a real sense of control. *HCC #284*



GoldenEar SuperSub X

→£1,450 ★★★★

Four drivers squeezed into a relatively compact design and given plenty of push from a 1,400W amp. Standout traits are impact and depth. HCC #272



KEF Kube10b

→£600 ****

The middle option of KEF's new Kube range packs a 10in driver, 300W Class D amp and 56-bit DSP engine to maintain efficient low-frequency control. HCC #283

TOP 5 Console games



God of War

An HDR showcase for both PS4 and PS4 Pro (and playable in upscaled 4K on the latter), this action/puzzler is massive in scope and, in the Leviathan Axe, features perhaps the best weapon in gaming! HCC #286



Call of Duty: WWII

Eschewing the more fantastical elements of recent *COD* entries and giving greater emphasis to tactics and staying alive, this is a reminder of why the FPS franchise is so well loved.

Superb sound FX, too. *HCC #282*



Monster Hunter: World

This series breaks out of its Nintendo origins to offer PS4/Xbox One owners varied, open-world gameplay, plus HDR and better-than-HD visuals that can be tailored to your desire. Monstrous fun. HCC #283



Super Mario Odyssey

Mario returns in this standout title for Nintendo's Switch console that endows its platforming fun with superior game mechanics, eye-popping visuals and a foot-tapping score. A genuine masterpiece. HCC #280



Far Cry 5

A cautious update on its predecessor, but there's still plenty of fun gameplay to be had in this open-world first-person shooter. Plays in native 4K HDR on Xbox One X, and better-than-HD on PS4 Pro. HCC #285



TOP 10 Accessories







KEF R50 →£600 ★★★★★

KEF's Dolby Atmos-enabled reflective modules are a smart choice to beef up a system. Using the company's Uni-Q point source drivers pays dividends, enabling full-range sonics that reach deep into your cinema room. First-rate build. HCC #252







Yamaha WX-AD10→£150 ★★★★★

Simple to use, unobtrusive add-on that brings MusicCast multiroom/hi-res streaming to legacy AV gear via 3.5mm/phono. Not a bad price – only available in grey, unfortunately.





Amazon Echo Dot

→£50 **★★★★**

Less impressive as a standalone speaker than its larger sibling, but more affordable. Use its 3.5mm output and Bluetooth to pair with third-party kit. Fun Al experience. A real bargain.



Nvidia Shield Android TV →£180 ★★★★

The Android-based streamer/ gaming box gets a gentle revamp – same silicon, neater design, new features including future support for Google Assistant. Slick and

easy to use.



Roku Streaming Stick+

→£70 ****

If a simple life is your aim, this content-rich, 4K/HDR-capable dongle from the streaming specialist is your friend. Idiot-proof interface and control. Good price.



Amazon Fire TV (2017)

| →£70 ★★★★★

HDR playback has been added to Amazon's great-value media streamer, although the absence of an Ethernet port does niggle considering its 4K talents. Cluttered UI.



Panasonic SC-GA10

→£230 **★★★★**

Panasonic partners with Google Assistant for its debut smart speaker, and doesn't forget to focus on sonic power as well as Al fun. Pricier than many rivals, but still appealing.

HCC #284



Apple TV 4K

→£180 (32GB) ★★★★ With Apple's iTunes movie

vision) movies at the same price as Full HD downloads, this compact media player (irritating handset aside) is sure to tempt.



PSB Imagine XA

→£350 ★★★★

These two-way Dolby Atmos-enabled upfiring speakers are fairly chunky, but work well at creating a height layer and the £350-per-pair ticket makes them an enticing option.



Xbox One X

→£450 ****

The most advanced games console on the planet dazzles with its native 4K HDR gaming chops, but the price tag is hefty and heavyweight users may wish it came with more than 1TB of storage.

TOP 5 Blu-ray/DVD boxsets



Ghost in the Shell: Stand Alone Complex – Complete Series Collection: Deluxe Ed.

A 100-page book, and other extras, are bundled with this pricey boxset that collects the brilliant anime's two seasons and three 'OVA' films. HCC #286



Heimat: Limited Ed. Boxset

Fifteen hours of epic German TV drama, following a single family from 1919 to 1982, are collected together in this extras-rich BD package from Second Sight. Visuals benefit from a restoration of the original negs. HCC #285



Buck Rogers in the 25th Century: The Complete Series

 $\star\star\star\star$

A lack of decent extras takes the shine off this package somewhat, but Buck looks pretty good in HD and the show remains as weird and wonderful as ever. HCC #285



Hammer Volume 2: Criminal Intent

Indicator again raids Hammer's library to dig up four black-andwhite crime thrillers from the late '50s/early '60s. Extras include an alternate cut of 1961's Cash on Demand. HCC #284



The Deuce: The Complete First Season

David Simon (*The Wire*) is the brains behind this evocative porn industry drama set in 1970s New York. This boxset offers quality AV and a couple of informative chat tracks. *HCC #284*





TOP 10 Soundbars & Soundbases



Yamaha YSP-5600SW → £1,900 ****

With its 46 drivers (including upfirers) this premium 'bar delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. HCC #254



Canton DM55→£330 ★★★★★

Canton's smallest soundbase still delivers big sonic thrills. Twin woofers underpin clean and crisp mids and highs, and build quality is first-rate. Doddle to use. Bluetooth built-in. HCC #260



Samsung HW-K950

→£1,300 **★★★★** Soundbar with additional wireless rears and Dolby Atmos support via four upfiring drivers. Impressively largescale performance, good connectivity. No native DTS support.



Samsung HW-MS750/ **SWA-W700**

→£700/£600 **** Upfiring drivers on this premium 'bar, but no Atmos decoding. Performance still dazzles, and the optional sub shows its merits with movie soundmixes. HCC #278



Sony HT-ST5000

musicality. HCC #275

→£1,500 ★★★★★ High-end Dolby Atmoscapable soundbar/sub. Upfirers elevate the soundstage (but don't wraparound). Sound quality overall is excellent, blending muscle and depth with



Q Acoustics M3

→£300 ★★★★★

A 4in x 6in woofer is tucked away in the M3's eye-catching angular chassis, ensuring this well-priced soundbar has a full-range performance. Simple to use. Bluetooth streaming. HCC #271



DALI Kubik One

HCC #263

→£800 ★★★★★

The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound.

HCC #269



JBL Bar Studio

→£150 ★★★★★

No subwoofer here, just a fairly compact stereo 'bar that offers a useful soundstage-widening 'Surround' mode, HDMI ARC connectivity, and a decent performance for the price. HCC #284



O Acoustics M2

→£300 **★★★★**★

Easily accommodated in/on AV furniture, and packing HDMI ARC for a simple hookup, this BMR-driver/ built-in woofer soundbase impresses with its energetic delivery and price. HCC #279



JBL Bar 5.1

→£650 **★★★**★

Switchable been stereo and 5.1 via battery-powered surround modules, this HDMI-toting package offers a cable-free multichannel solution. A 10in subwoofer underpins the soundfield. HCC #283

Back-catalogue Blu-ray



Charley Varrick

Walter Matthau stars in and Don Siegel directs this superior 1973 bank robbery thriller, brought to UK Blu-ray by indie label Indicator. A great-looking Full HD transfer and excellent selection of extras. HCC #283





The Awful Truth

Cary Grant and Irene Dunne star in this 1938 screwball comedy given an assured BD release by The Criterion Collection, with a monochrome image (based on a 4K restoration) that is a joy to behold. HCC #285



Night of the Living Dead

The Criterion Collection pleases fans of George A. Romero's genredefining 1968 horror with a labour-of-love two-disc BD release. Image quality benefits from a consistent 4K restoration; extras are plentiful. HCC #283



eXisten7

101 Films launches its new Black Label imprint with this solid outing for David Cronenberg's 1999 sci-fi mind-melter. Loaded with bonus features, although image quality could perhaps be better. HCC #286



Casablanca: Premium Collection

A fresh transfer (from a 4K scan), lossless audio and some new extras make this double-disc BD release for the much-loved war-time romance an essential purchase. HCC #284 ****





TOP 5 PVRs



Virgin Media TiVo, **£subscription**

This triple-tuner PVR offers recording flexibility, useful features – you can undelete deleted shows! - and smart TiVo functionality. If you're in a cable area, consider it





Sky Q, £subscription

Sky's new top-tier product offering dazzles with its image-rich user interface. wireless multiroom skills and recording flexibility delivered by the PVR's 12 tuners. Now supports 4K content



Humax FVP-5000T

Revamped menus, faster operation and tweaks to its triple-tuner engine make this the most advanced Freeview Play PVR around – and it doubles admirably as a DLNA player/ media iukebox. 500GB/1TB/2TB





Humax DTR-T4000. **£subscription**

This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage





EE TV Smart Box £subscription

This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though

TOP 5 Headphones



Sony MDR-HW700DS,

Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb - great for late-night listening





Nuraphones, £350

Unusual over-ear/in-ear hybrid cans that measure the acoustic response of your inner ear to fine-tune performance. It's a highly impressive trick, but the design can make these a bit uncomfortable to wear.





1More MK802, £150

Ignore the bling-tastic blue or red finishes and focus on the assured sound performance from these well-priced closed-back cans. Features include wireless Bluetooth and app control (with burn-in mode). Great value





Bowers & Wilkins PX, £330

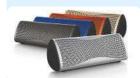
B&W adds noise-cancelling to the general spec of its previous P7 wireless cans, a welcome update for those seeking uninterrupted listening. Offers a neutral, balanced sound suited to both movies and music



Audio Technica ATH-SR9,

45mm drivers and Audio Technica's Midpoint Mount tech deliver wide, deep, spacious sonics. Memory foam padding aids listener comfort: 3m cable should suit most AV setups

TOP 5 Wireless speakers



KEF Muo, £300

Portable Bluetooth speaker that's a cut above much of the competition, KEF's sonic knowhow results in a punchy, dynamic presentation that cherishes lossless rips. Excellent build quality





Sony SRS-X11, £60

An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. Get two and they can work in stereo ****



O Acoustics BT3, £280

Bluetooth stereo pair with optical input makes a good alternative to a soundbar (there's even a subwoofer pre-out) while remaining a dab hand at music. Neat and tidy design, good price



AirPulse Audio A200, £800

Monitor-style active speakers offering physical and wireless hookups, a premium build and a sweet vet weighty sound delivered by ribbon tweeters and 5.5in midbass drivers



Denon HEOS 5 HS2, £350

The mid-range multiroom speaker gets a second-gen revamp, adding welcome hi-res audio playback and Bluetooth connectivity. Gorgeous looks, boisterous, room-filling sound

HOME CINE



The scores are in We pick the very best original movie scores - but which comes out on top? Totally roarsome The Jurassic Park movies get a 4K/DTS:X makeover

Hidden cinema Twin-screen custom install

→ Reviews

Panasonic DP-UB9000 4K Blu-ray player ATC HTS-40 on-wall system **Sony AF8 OLED TV** LG SK10Y soundbar SVS PC-4000 subwoofer **PLUS** News, software, opinion, comps and more

CONTENTS SUBJECT TO CHANGE – BUT ONLY FOR THE BETTER

122 OPINION



AV Avenger

From in-car digital assistants to 8K displays and digs at rival events, this year's IFA Global Press Conference was a pool-side feast of fun and facts, says **Steve May**

'INTELLIGENCE IS LIKE love, you can never get enough of it.'

So says Paul Gray, principal analyst and researcher at IHS Markit, obviously channelling his inner Lennon. He's on stage at the IFA GPC (Global Press Conference), an annual shindig organised by the people behind the Berlin IFA tech expo, explaining the rise of artificial intelligence. The GPC is all about such tech trends and market stats.

It's actually heady stuff for consumer electronics geeks, although it helps that the GPC is usually held somewhere nice. This year it was Rome, allowing me to digest most of this valuable data around the hotel swimming pool.

Gray is talking about developments in smart technology, and I find a lot of what he says worrying. The biggest area of development for artificial intelligence, he predicts, will not come in home entertainment, but automotive. Cars, says Gray, will be a larger market for smart speakers than the living room, and apparently the car market is about to get its own digital assistant to rival Alexa and Google. German Autolabs has developed a Teutonic smart platform specifically for drivers. It'll be called Chris.

Chris will be announced at IFA, and comes in the form of a windscreen-mounted interface, which connects by Bluetooth to your smartphone. I'm told Chris will be my touch-free co-pilot (I think I already have one of them), and will sell for \leqslant 300. Disappointingly, no one explains why it's called Chris. I would have preferred Herbie.

Pass the 8K popcorn

There was a cinematic theme to this year's IFA GPC. For the press conference itself, IFA took over an out-of-town cinema complex, issuing delegates

with IFA-branded popcorn as they entered. The subsequent gala dinner was staged at Rome's Cinecittà movie studio, on the set once used for the HBO TV show *Rome*.

The big AV trend at this year's Berlin super-fest will apparently be 8K. Sharp has already announced an 8K display (see p9), and it seems all the other major brands are now hand-gluing pixels to panels in response. AV is on the up, I'm told, and the global TV market is going gangbusters.

Of the 100 million TVs that will be sold this year, more than 40 per cent will be UHD. Perhaps a more mind-bending statistic, according to the market analysts at GfK Global, is that **there are more than 44,300 different types of 4K Ultra HD TV available worldwide.**

Inevitably, at the end of the conference, there's some sniping by IFA at rival super-show CES. The CTA, which organises the Las Vegas exhibition, and IFA are forever trying to outdo each other for the title 'World's Greatest'. Size is a perennial topic. CES is big, and getting bigger. IFA, having seconded most of the Messe Berlin exhibition grounds, has run out of space.

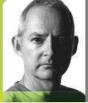
'It's a gamble if any brand can make its mark there,' says Jens Heithecker, IFA Executive Director, of CES. He maintains technology shows 'should not be about size, but about structure and organisation.'

Not to be out-quipped, Dr. Christian Göke, CEO of Messe Berlin, adds in a reference to the power outage that afflicted the show in January: 'It's difficult to find your way around CES... even when the lights are on.'

A nearby American journalist explodes at the slight, which merely makes the comment even funnier. I laughed all the way back to the pool

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